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Psychoanalytic Theory and Projective Methods:

In commemoration of Sigmund Freud: 1856-1939

It has been largely since the time of Sigmund Freud's death that American psychologists have seriously examined his contributions to personality theory and psychotherapeutic technique. Yet, curiously, it was a psychologist, G. Stanley Hall, who introduced him to this country. It may prove to have been a healthy historic accident that the temper of psychological interest in this country precluded serious attention to psychoanalytic theory at the turn of the century. At this time Freud's major theoretical commitments were specified. American psychology was struggling through its physiologic and philosophic backgrounds for an identity of its own. The empirical laboratory method and the functionalist orientation toward cognitive and behavioral adaptations to the external world led to the formulation of an objective research technology and theory construction which anchored psychology securely in scientific method. The inner world of the psyche was still suspect.

By the time that Gestalt theory had been imported and Behaviorism had blossomed in this country, the orientations of American psychology and Freudian theory had developed independent subject matters and orientations. However, as their techniques and their identity became firmly established, academic psychologists expanded the scope of the problems which they subjected to scrutiny. Hence, when psychologists turned their attention to psychoanalytic theory and practice, they had developed a systematic technology and a body of alternative fact and theory of their own.

The introduction of the Rorschach to this country in the 1920's with its ties to psychoanalytic theory had a similar latency period shortened con-

siderably, perhaps, by social forces such as the war which directed psychologists to a broad range of clinical problems that had not before been one of their principal provinces. For diagnostic work and therapeutic planning, the usefulness of conventional psychometric methods proved limited. In the handling of varied psychotherapeutic problems, academic psychology had little to contribute. Projective methods and psychoanalytic theory then became significant subject matters and heuristic principles for a psychology which in a few decades had developed means for integrating them into its science. Freud's observations of hitherto unnoticed or ignored phenomena and the theoretical system which he constructed to account for a variety of diverse psychologic events have provided a framework for interpretation of projective data and a position which can be communicated, attacked, accepted, and tested.

Regardless of the ultimate outcome of the rapprochement between psychoanalytic and other psychologies, it is evident that Freud's theories have placed experimental-academic and clinical psychologists on their mettle to deal with hitherto avoided phenomena of human behavior. They have been challenged to utilize both their professional curiosity and ingenuity to reappraise Freud's conceptions in the light of scientific method and the laws of evidence and to invent new ways of applying these methods to obscure phenomena and constructs whose face validity has been placed so high by some and so low by others.

It is unimportant at this phase in the development of clinical psychology whether Freud's ingenious conceptualizations are basically true or false. They have provided a frame-

work for perceiving, thinking, hypothesizing and experimenting.

The following group of papers were written by university-trained psychologists whose primary identifications are as psychologists, who are skilled in research methods and who wish in

their papers to demonstrate how they have managed to integrate their faith in psychological science and their interest in psychoanalytic theory.

BERTRAM R. FORER
Executive Editor

Freud and Projective Techniques

LEOPOLD BELLAK, M.D.

One might express the genius of a man quantitatively by assaying the length of time his creative synthesis spans unsurpassed. Thus, Newton's genius reigned sovereign in physics for 200 years until Einstein formulated even more encompassing conceptions. And Einstein, of course, is set in proper perspective by the surpassing of Newton and by the fact that his master is not yet.

Such a temporal measuring rod dwarfs rightly though painfully the intellectual feats of many who have benefitted the world. Alexander Graham Bell applied for the telephone patent the same day another did so independently. Praise be to Jonas Salk, and may he live and prosper, but his work is of the laboratory Zeitgeist. And then there are, of course, the rest of us, who do well enough just muddling along.

Sigmund Freud has no Newton before him. If the theory of relativity is said to be the greatest feat the human intellect has achieved, it is difficult to find words for the attainment of Freud: because Freud also had no Max Planck, no Nernst, no Niels Bohr around him — nobody close to his own level of comprehension except the students whom he later taught.

Before Freud there were writers, philosophers, clinicians with isolated bits of insight. Freud was the first to study the unconscious systematically, to formulate general lawful principles about it to permit the consistent understanding, prediction, educational and therapeutic control of behavior.

There is nothing to suggest that, had Freud not lived, anyone else at the turn of the century or this first half of the twentieth would have arrived at a similar goal. It is very doubtful that any of the later modifiers — Adler, Jung, Rank, Horney,

Sullivan would ever have denied that Freud was their *conditio sine qua non*.

The essential fact in Freud's creative synthesis is that he managed to see a variety of seemingly disparate events in human life as having a common denominator. He could put dreams, perceptual distortions, neurotic and psychotic productions and ordinary daily behavior into an orderly sequence; he could show the continuity of hysterical behavior with earlier genetic events and by this means establish the general continuity of human behavior in terms of the principle of determinism and the assumptions of metapsychology.

Again, outstanding qualities of Freudian psychology are its all embracingness and internal consistency. All other psychological systematists including all post-Freudian ones are by comparison hit-and-run drivers. It has escaped general attention that the modifiers of Freud's propositions have hardly ever bothered with an extension of their views to such basic human phenomena as wit and humor, which Freud was first to explain as an integral part of a general theory of behavior.

It is probably not widely enough known that Freud was much more dedicated to the development of a general psychology than a specific psychopathological theory. In fact, one might say that projective techniques have their origin and early theoretical orientation in a mistaking of Freud's concept of projection for a pathological process rather than a part of normal perception, as he intended it.

Rather than thinking of projection strictly as a pathological defense mechanism as he discussed it in connection with paranoia, Freud also

spoke of it as follows in Totem and Taboo: (8) [italics mine].

"But projection is not specially created for the purpose of defense, it also comes into being *where there are no conflicts*. The projection of inner perceptions to the outside is a primitive mechanism which, for instance, also influences our sense-perceptions, so that it normally has the greatest share, in shaping our outer world. Under conditions that have not yet been sufficiently determined even inner perceptions of ideational and emotional processes are projected outwardly, like sense perceptions, and are used to shape the outer world, whereas they ought to remain in the inner world."

and a few pages later in the same book:

"The thing which *we, just like primitive man, project in outer reality*, can hardly be anything else but the recognition of a state in which a given thing is present to the senses and to consciousness, next to which another state exists in which the thing is *latent*, but can reappear, that is to say, *the coexistence of perception and memory, or, to generalize it, the existence of unconscious psychic processes next to conscious ones.*"

In essence Freud states in these paragraphs that memories of percepts and ideational and emotional processes influence perception of contemporary stimuli. Projective techniques are predicated on a study of the meaningful differences of individual responses to standard stimuli. They implicitly assume psychic determinism, and relatively stable systems of motivation which influence perception, thinking and motor control. Sigmund Freud's theories supplied most of the stimulus for these forms of personality studies and still offer the most consistent conceptual framework for the understanding of projective techniques.

Freud, of course, had used the concept of projection earlier, in 1894 in his paper on "Anxiety Neurosis" (5) and then again in 1896 in a paper "On the defense of neuropsychoses" (6) and in 1911 in the case of Schreber (7). The concept of perception as the primary datum of all psychology had been anticipated by Hume (Nihil

est in intellectu quid non antea fuerit in sensibus) and by Berkeley (Esse est percipi) and also by Herbart's concept of apperception.

Freud, of course, also introduced the structural point of view into psychological science, aside from the strictly dynamic viewpoint, as we will discuss yet below; his concept of defenses as broad—adaptive modes of behavior are absolutely fundamental for diagnostic inferences via projective techniques. Of course, projective techniques resemble nothing as much as the imaginal processes to which Freud addressed himself especially—daydreams, phantasies, dreams: by virtue of that fact alone, psychoanalysis and projective techniques are closely related.

Psychoanalysis and projective techniques are closely related historically. The words quoted from Totem and Taboo were published in book form in 1913. At the end of 1912 Hermann Rorschach handed in his dissertation for the degree of Doctor of Medicine on "Reflex Hallucinations and Symbolism" and almost simultaneously published a paper in the Zentralblatt für Psychoanalyse on "Reflex hallucinations and Symbolism," considered by Ellenberger (4) a forerunner of his interest in inkblot responses.

It is fortunate that we have Ellenberger's exhaustive study available for an understanding of the background of Hermann Rorschach's work with inkblots. He illustrates the confluence of the cultural impact, personal motivation and direct learning from preceptors: thousands of Swiss children used "Klecksographie" the making of inkblots for play. Rorschach showed an early interest in kinesthetic experiences, and Ellenberger thinks that a dream of seeing his own brain dissected (which Rorschach had after witnessing the first autopsy) may well be considered the initial starting point of the "Psychodiagnostics." Rorschach tried to unify Mourly Vold's (13) kinesthetic, psychophysiological approach to dreams with that of

Freud, very much the way he studied the responses to the inkblots. And Rorschach also freely used all he learned from Bleuler and particularly from Jung's association test for the evaluation of inkblot responses, aside from drawing heavily upon Freud's writing and his own early work as psychoanalyst.

The other early major confluence of Psychoanalysis and projective techniques concerns of course the T.A.T. created by Henry Murray, with the able assistance of Christina Morgan (12). Murray had studied medicine, had been particularly dedicated to the organismic, configurational, syndromatic arrangement of organic chemistry, and received a Rockefeller Fellowship in biochemistry. He associated himself with the Harvard Psychological Clinic after being analyzed by Jung, and later by Franz Alexander and supervised by Hanns Sachs. The T.A.T. was from the beginning more clearly conceptualized in terms of psychoanalysis than the Rorschach, grew up in the climate of psychoanalytic concepts even outside of the Harvard Psychological Clinic. Though a charter member of the Boston Psychoanalytic Society, Murray went theoretically his own way in many respects. In the process of developing the T.A.T., he also produced a fruitful elaboration of some psychoanalytic concepts in his need-press theories.

The history of projective techniques, psychoanalysis and academic psychology is a good illustration of Hegelian dialectics, of thesis, antithesis and synthesis.

Psychology, in the hands of Wundt was largely a psychophysiology of sensation and perception and other compartmentalized concepts of the mind; they were related to each other about as intimately as the members of various faculties of a German University—mostly not on speaking terms. Gestalt psychology developed as one school of protest and conditioning as another. In pre-Pearl Harbor psy-

chology the burning issues on the American scene were the controversies between learning theories of Gestalt proponents and conditioning schools: outgrowths of physiological psychology. Psychoanalysis, when acknowledged, was for the most part grossly misunderstood and triumphantly reduced ad absurdum in a number of gratefully received doctor's theses. There were only a few people in the United States in 1940 who could use the Rorschach test, and there were less than a dozen references, mostly of minor value, concerning the T.A.T.

The war years with their needs for personnel, forced psychology into contact with reality. In this antithesis, clinical psychology avalanched, methods for personality appraisal sprang up overnight, and psychoanalytic theories were almost the only ones available for trying to understand people (rather than rats) clinically or in testing.

Naturally, the emergency circumstances led to a misuse of theories and tests. The third step, the synthesis, now seems concerned with a better approximation of the laboratory's *methods* (and learning theories) with the psychoanalytic theory and clinic. Perception has returned, now part of a dynamic motivational psychology of personality (although the tide seems to be turning on some of psychology's coasts because of the horror of some psychologists who found themselves almost inadvertently thinking in psychoanalytic terms).

Projective techniques are benefiting from the advance of psychoanalysis on the one hand, e.g. the formulation of ego-psychological propositions, and on the other hand from more sophisticated application of academic psychological methods to the peculiar problems of projective tests (of which the manual, "Technical Recommendations for Psychological Tests and Diagnostic Techniques" of the American Psychological Association, is one first approximation).

Academic methodology, on the other hand, is having a much needed, good influence on psychoanalysis in the hands of analytically well-informed psychologists or psychologically trained analysts. This present conceptual cross fertilization holds out bright promises.

SOME CURRENT CONCEPTUAL RELATIONSHIPS BETWEEN PROJECTIVE TECHNIQUES AND PSYCHOANALYSIS

It is not difficult to agree upon the fact that projective techniques utilize by no means only the mechanism of projection for the study of personality; it is not at all as easy to formulate *what* the basic processes involved are. Previously (1) the writer tentatively arrived at five major categories involved in the currently used methods:

1) content, 2) expressive data, 3) Gestalt formation, 4) body image, 5) a study of choices

1) Methods based upon the study of *content*: here we are concerned with *what* the patient sees or says or does. The T.A.T. and the MAPS tests are the best examples. To a certain extent, the Rorschach content analysis, finger painting and other methods also belong here.

2) Study of expressive, *structural* aspects: the main inquiry is directed toward *how* the subject sees, says or does something. Here we refer to techniques like the Mira, Mosaic, Rorschach, and graphology, which rely on the subsemantic levels and myoneural functioning as valid avenues for the understanding of personality factors and structure.

3) *Gestalt functions*, as exemplified in the Bender-Gestalt, the Mosaic, (and again in the Rorschach (W, D, dd, S, etc.)). In the T.A.T. this function enters, e.g. when the subject is unable to apperceive the picture as a whole or when he leaves the stimulus altogether.

4) *Body-image or self-image*: Figure drawing is primarily predicated upon this approach. It enters into the Ror-

schach and the T.A.T. when, for example, the subject identifies with puppets or sees a person as crippled or the violin as broken or identifies with an athlete.

5) *Methods using preference*: The Szondi test is based upon a system of selective choices as personality indicators. Color choice in finger painting, selection of figures in doll play, as well as in the MAPS, etc., all come under this category.

It is apparent that all five organic aspects enter into every one of the projective methods, although in varying degrees.

Without going into a further discussion of these processes, one can see a varying relationship to psychoanalytic theory. Freud was dedicated to a genetic point of view, which included non-experiential and experiential genesis. To the first belong his ideas on inheritance and constitution, of which only one aspect is currently gaining importance—namely: his belief that there may be primary congenital ego variations, genetically transmitted or otherwise caused (and there is of course, nothing in psychoanalytic theory that would not allow for congenital variations in libidinal endowment and consequent maturation).

Psychoanalysis, however, has paid relatively little attention to the non-experiential factors in human development and has on the other hand contributed greatly to our understanding of the shaping of personality by experience (though definitely predicated upon and consistent with biological, libidinal development). It so happens that apparently the expressive, formal, characteristics seem to be more determined by subsemantic non-experiential, organizational dimensions of the person while the specific dynamic content seems more predicated upon individual experience. The result is that psychoanalysis at first contributed more understanding of the *content* of human experience than to that of its *form*.

It follows that psychoanalytic theory has been first, and more easily, related to those aspects of projective techniques which deal also with content, such as the T.A.T., sentence completion, etc. Herman Rorschach was himself so interested in the non-content aspects that this technique developed by a psychoanalyst—and for many years nurtured almost exclusively by European psychoanalysts—only lately is being considered more extensively in the light of psychoanalytic theory itself. (10) (16).

Projective techniques share this fate particularly with the approach to artistic creativity. Generally one can say that psychoanalysis addressed itself at first not only to content, but to id content of behavior, of artistic creation, of projective techniques. Only lately, as we will discuss below, have ego psychological aspects come under consideration.

Aside from *content* we are, however, concerned with the *form*—the mode of expression—how something is expressed in art and in projective techniques. And finally, we are interested in the nature of the creative act itself, in both spheres. To start with the latter first—since we know a little more about it: Kris (11) has spoken of “regression in the service of the ego” to explain the emergence of artistic creativity: that is certain controlling functions of the ego are temporarily and voluntarily and partially suspended to allow access to primary process material, not unlike certain ego functions, are excluded in the process of falling asleep. I have suggested the concept of “oscillating function” (1) of the ego—a self exclusion of certain ego functions and regaining of them in fairly rapid change which I feel is essential for the process of artistic creation, projective testing, free association, etc., taking place. In order to tell a story of the T.A.T., a subject has to appraise the stimulus correctly (“tell me a story about the picture”) give up enough control to distort the stimulus in his own individual way

(or else we get a descriptive, constricted story, like from obsessives); he cannot give up too much control, or else we would have to judge a loss of normal adaptive functions. The progress of the story necessitates oscillation between ego control and its decrease.

We know least so far about the choice of the *modes* of expression, (as we know least definitively about the choice of symptoms in the individual person): about why one person produces great art and another mediocre art. We know of course about sublimation of certain libidinal drives leading to choices of media, or of neutralization of aggression, say leading to vigorous sculpture: but we have so far been inclined to ascribe artistic talent (and the finer details of projective productions) to innate, inherited characteristics. These latter may indeed play a role, but there is good reason to suspect that further study of ego psychology may give us clues to understand artistic talent, details of modes of performance.

One beginning may well lie in the work of Fries and Woolf (9) who have suggested that certain congenital activity types may set the framework for choices of defenses as well as for more detailed choices of motor behavior. Their findings suggest that the more active infant not only uses outgoing motor behavior but may also choose alloplastic defenses, the less active one autoplatic defenses, like withdrawal, regression and correspondingly be possibly generally more introvert. Early child-parent interaction, as studied by Spitz (17) (18) may determine the amount and type of perceptual and motor activity of a child. It may well turn out that certain types of life history favor ego synthesis of musical talent and other constellations painting ability. In fact, there is suggestive evidence that a trait “artistic ability” might be related to definite factors in the life history and psychodynamics: one cannot help being struck with the high incidence of homosexuality or rather bisexuality in people active

in the artistic field. Somehow the disturbance in sexual development must lead not only to some of the well known libidinal consequences but also to certain ego-qualities, such as feeling for color, composition, rhythm, so notoriously absent in the more robust males. An important paper on a related topic was published by Rosen (15) who advanced some definite hypothesis concerning the relationship of certain life history data and ego-integration to the genesis of mathematical talent: he described a strephosymbolia related to the existence of the mathematical talent as due to specific intrasystemic disturbances of the synthetic function of the ego. There is no reason why careful study should not demonstrate artistic talents to correspond to similar definitive data.

To summarize this very sketchy and brief discussion, psychoanalysis not only enables us to understand the *content* of projective material, (both from the standpoint of libidinal and aggressive components, and also from the ego psychological standpoint); it also makes it possible to study the *process of creativity* in projective techniques (and artistic creation) as an interplay of full and decreased ego control and related freeness of libidinal impulses. Finally, I personally believe, there is increasing reason to hope that study of the earliest life experiences and the earliest factors in ego function may illuminate the specific nature of the formal modes of expression, including the elusive matter of talent with regard to producing those fortuitous combinations of color, form and rhythm and tone which are experienced as artistic.

Under these circumstances it is easy to see that all the dimensions of behavior enumerated above as involved in projective testing can be usefully subsumed under the roof of psychoanalytic theory. I have in fact tried to offer the details of such a framework elsewhere (3) under the title of "An Ego Psychological Theory of Projective Techniques." In brief, it

has to be remembered that while muscular expression may be related to congenital or inherited characteristics, motor functioning must be seen as part of the congenital integrational capacities of the ego: one of the functions of the ego is precisely motor control. Furthermore, it should of course not be overlooked that while some expressive characteristics may be congenital, they may be determined both congenitally and experientially. There is no question that even the cerebral dysrhythmia of an idiopathic epileptic may be increased or decreased by life experience. A consistent, healthy growing up will tend to minimize all forms of non-integrative behavior. There is also no doubt that children brought up under the impact of affective overstimulation will show much less muscular coordination than those whose life experiences permit a better balance of drive and control.

Similarly, much current psychoanalytic research is concerned with the infant's earliest perceptions of itself and the environment, important for all projective techniques. In the author's opinion, the main differences between the primary process and the secondary process could be stated as the existence of good perception and of clear articulation of Gestalten in the latter. Gestalt formation being part of the synthetic function of the ego. The relationship between primary process and secondary process may best be understood genetically: at first the infant's perceptual field is hardly defined and only gradually does it learn to separate figure and ground and, so to say, better differentiation of various figures. This includes differentiation of itself from the outside world and first one person from another and varying objects. It is part of poor object relations that the secondary process does not entirely develop or does not become firmly enough entrenched. As the child develops new apperceptions are superimposed upon the previously existing apperceptive

mass. One can think of the mutual structuring process in terms of a comparison with a composite photograph. The better reality-testing and object relations have developed the less each contemporary apperception is influenced by the previous apperceptive mass. If psychological development was poor each contemporary stimulus is flooded by the determinants of the past, resulting in fuzzy perception, misinterpretation, and contamination. The phenomena of *deja vu* and *deja reconnaître* are common phenomena even in a temporary regression of relatively normal people and are familiar symptoms of psychoses. Under other conditions of decreased ego strength we can observe similar regression, e.g. in hypnagogic phenomena and in dreams. Thus perceptual problems of projective techniques, including those of body image and Gestalt formation per se, can most profitably be understood in terms of these genetic psychoanalytic hypotheses.

And, of course, the study of any kind of preferences in projective techniques is so obviously dependent upon motivation as hardly to need more specific relating to psychoanalytic dynamics.

It was a mistake on the author's part, however, to speak of an ego psychological theory of projection: this he is the more eager to confess and correct since it seems a common error to commit these days (the ego is a so much more socially acceptable dimension of personality than other psychoanalytic concepts!). What is under discussion, of course, is a person's interacting with the environment, in the case of projective techniques with standard stimuli. When we study these forms of responses, we study not only the ego, but study the interaction of drives of the id, forces of the superego and the integrative mechanism of the ego in relation to the stimulus. In that sense it is as erroneous to speak of ego psychological study as it is to speak of an id

psychological study. There should only be a *metapsychological* study of all aspects of a response to a stimulus.

A *psychoanalytic metapsychological theory of the projective techniques*, then, involves studying the relationship between the forces of the id, ego and superego interacting with outer reality (we continue to use these terms almost anthropomorphically in a shorthand way, though we are aware of the fact that they are simply concepts). It permits us to understand the manifest outcome of the struggle of these forces and to make some predictions about the stability of future movement of their equilibrium. In that sense, the study of the defenses and of character formation are a cornerstone for the diagnostic and prognostic value of projective techniques.

DIAGNOSIS: SOME COMMON FUTURE PROBLEMS OF PSYCHOANALYSIS AND PROJECTIVE TECHNIQUES

Idiographically speaking, we mean by diagnosis a statement of the momentary constellation of (psychodynamic) forces in a single individual. When we try to subsume this individual configuration under the larger heading of some commonly seen syndrome, we are adopting a nomothetic viewpoint and we simultaneously lose some of the finer features of the given case and gain some points in actuarial predictability by assigning the case to a class of constellations.

Since we are admittedly dealing with a complex interaction of forces in a personality, we have to be aware of the fact that we are dealing with relatively unstable equilibria. Inasmuch as a diagnosis is of little empirical value clinically if it holds good only for a given moment, all diagnosis, including those arrived at by projective techniques, have to involve statements of the stability of a certain picture, the likelihood of staying at that point or of progression or regression.

The stability of defenses, as described by Freud and other analysts,

the nature of the defenses employed, the stability of the character formation, and the force of the impact of impulses and the ego's ability to neutralize or sublimate these impulses are the best indicators of the stability of the personality diagnosis. The author has indicated some avenues concerning the T.A.T. (1, 2) (and similar approaches can be used for other techniques). For instance, if a T.A.T. story starts out conventionally and in a controlled way but later shows manifestations of break-through of uncontrolled impulses, it must be concluded that even if the manifest picture of the patient's behavior should be seemingly quite good the chances for serious upset are very great. In that sense, the study of the defenses in terms of metapsychology is the ideal answer to the old poser of the relationship of the latent to the manifest.

Probably as a reaction to the earlier Kraepelinian orientation of classical psychiatry with its rigid compartmentalization, the possibility of recognizing and labelling rather stable diagnostic equilibria is being currently underestimated, (as much by Rogers and his school as by certain psychoanalysts). The clinical facts are, nevertheless, that a good many people stay normal, neurotic, manic-depressive or schizophrenic within certain limits all their life. In fact, I have seen patients whose past histories clearly showed that over several decades even the specific nature of their recurrent psychotic episodes stayed nearly identical in form and content. A woman was hospitalized five times at fairly regular intervals from her 16th to her 70th year, showing the same clinical symptomatology at every admission, and lived a relatively normal life in between. The future problems of both psychoanalysts and projective techniques lie not only in the increasingly sharper apperception of current diagnostic status but in formulation that will permit increasingly better prediction of the stability or

the nature of change of a given picture.

Inasmuch as such predictions are predicated upon qualitative and quantitative implications of the interacting forces, it is obvious that quantitative appraisals of the ego, or rather of "ego strength" (defined as the ability of the ego to perform its stated functions) are necessary. Such an appraisal of the ego perforce involves also an appraisal of the id and super ego forces it has to integrate in relation to problems and resources offered by external reality.

A preliminary or corollary of the endeavor for quantitative appraisal of the forces involved and of prediction must of course be a continued attempt for clearer definition of the concepts used.

Inextricably interwoven, the future of both Freud's heritage and of projective techniques lies on the common road of clearer definition and quantification for the sake of greater predictability and upon further painstaking exploration of the earliest phases of ego formation as nuclei of later modes of behavior.

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Gauging Primary and Secondary Processes in Rorschach Responses¹

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When Rorschach gave us his test—his blots, his way of administering the experiment, as he called it, and interpreting the results—he also left us a system of scoring the responses. Essentially, this was a way of abstracting from a complex performance four or five important dimensions—dimensions which hundreds of Rorschachs since have found most useful. Hermann Rorschach was perfectly open in pointing out the intuitive and heuristic nature of these scoring categories. One of the first points he made in his monograph was that the theoretical basis of the test was almost non-existent.

Since Rorschach's death, other hands have worked to expand and perfect the scoring, but mostly this has meant increasing its differentiation and making explicit the criteria for assigning the particular scores. Attempts to work out a theoretical rationale of the test, or to construct new scoring systems on a theoretical basis, have been few indeed. It seems that the majority of workers have followed Rorschach himself in working mainly within the framework of some kind of psychoanalytic theory in their thinking about personality, yet only rarely has this led to attempts to set up new scoring categories.

With the help of a number of assistants and colleagues,² I have been

trying to develop such a theoretically-based system of scoring. Rather than taking existing categories for classifying Rorschach responses and asking (either via theoretical analysis or empirical correlation) what they mean, we have started with the psychoanalytic theory of thinking and have sought to find aspects of the test performance that concretely embody the concepts and phenomena to which the theory directed our attention. The present article is a progress report on this work, which is still in process and has not as yet turned out findings rigorously enough controlled to be worthy of publication. My intention is primarily to give an example of a way that Freud's thinking may be able to make an even greater contribution to the usefulness of the Rorschach method than it already has. The scoring system described here is at present being used in research only, and it does not try to capture all that is important to score in Rorschach responses. Rather than competing with conventional systems (with which it slightly overlaps), it supplements them.

Specifically, it is limited to the problem of finding operational definitions for the psychoanalytic concepts of primary and secondary processes. It is rather remarkable that these are among the least-known and least well understood of Freud's concepts, considering the basic place they hold in

¹An earlier version of this paper was read at a meeting of the New York Chapter of the Society for Projective Techniques, November 19, 1954. Part of the research reported here has been carried out with the support of a grant from the National Institute of Mental Health.

²I am grateful to many persons who have helped in various ways with the work reported here. Marilyn Brachman and Anthony Philip have been able research assistants; Joan Havel's contribution to the manual is

more extensive than anyone else's and was invaluable. Roy Schafer and I have exchanged ideas constantly while he was writing *10* and I my contribution to *5*, and ever since; he and his colleague, Justin Weiss, have improved the manual by many valuable criticisms and suggestions. To David Rapaport, I am indebted for many things, perhaps most of all for a point of view from which this work is a natural outgrowth.

the theory, and the fact that his account of them was first published over fifty-five years ago, in the *Interpretation of Dreams*. The reason probably is that the seventh chapter of that book, where the concepts are introduced and most fully expounded, is about the toughest going in all of Freud's output, and until recently no good translation was available. (1)

Psychoanalysis popularly has the reputation of being a voluntaristic, anti-rational theory, one that portrays thought as the plaything and creature of man's impulses. Actually, of course, Freud did *not* deny that logical, rational, realistic and efficient mental processes exist, or even that they make up a great part of conscious mental life, a part which his therapy aimed to enlarge. He grouped them under the conceptual heading *secondary processes*. The term *secondary* was a warning, however, that another type of thinking preceded it genetically and had priority for our understanding of the unconscious. In his studies of neurotic patients, he found that their dreams and symptoms were not the random coughs and sputters of a faulty engine, but intelligible and highly meaningful products of a peculiar kind of mental operation. This he called the *primary process*. He found evidences of its workings in the slips of the tongue and other errors, in jokes, in the thinking of primitive people, children, persons under extreme stress and strong affect, and in the creative processes of artists. It disregards considerations of time; logical contradictions abound; when the primary process holds sway, ideas shift about, lose their identities through fusion or fragmentation, become concrete and pictorial, and are combined and associated in seemingly arbitrary or trivial ways. The course of thinking and of remembering is dictated by the instinctual drives, while realistic considerations are disregarded and the distinction between wish and reality is lost. Truly, the picture of a mind wholly in the grip of the pri-

mary process deserves the image of the "seething cauldron," which Rapaport has used to describe it. (7)

One needs only to imagine such a state of affairs to realize that it is an ideal conception, rather than the description of an empirical possibility. Just as the rational man of the "Enlightenment" was an ideal type never to be encountered, likewise his opposite, the Id incarnate. In much of what Freud wrote about these concepts, it is fairly clear that he did not think of them dichotomously, but as defining the extremes of a logical continuum. Any actual thought process, even that of a baby or a deteriorated schizophrenic, has to be located somewhere in between the poles. Rapaport (8), Hartmann (3) and Kris (6) are quite explicit about this way of viewing primary and secondary process.

Out of the many points that might be made in discussing these concepts, I want to emphasize three. First: the more primary the thinking, the more it is organized and compelled by drives. In contemporary psychoanalytic ego psychology, motives are conceived of as a hierarchy, ranging from the most uncontrolled libidinal and aggressive urges to the most controlled and relatively autonomous drive-derivatives, such as interests, values, highly socialized desires, and the like. As we go higher in this schematic structure, originally raw, blind urges are increasingly tamed by counter-cathetic controlling structures, so that the energies are *bound*, and (in Hartmann's term) *neutralized*, or sublimated. Now, a motive belonging anywhere in this hierarchy can get control of a train of thought, so it follows that the less neutralized the drive and the closer its aims are to those of the original instincts, the more primary will be the mental process.

Second: primary thinking can be recognized not only from its preoccupation with instinctual aims. It also has certain peculiar *formal* characteristics. These include autistic logic in-

stead of straight thinking, loose and nonsensical types of associative links, and distortion of reality in numerous ways. But the most notable formal deviations of primary thinking were described by Freud as the mechanisms of the dream work. (1) *Condensation* is a process resulting in the fusion of two or more ideas or images. *Displacement* is a shift of emphasis or interest from one mental content to another (usually a less important content in terms of relevance to conflict or instinctual aims). *Symbolization* is the replacement of one idea or image by another, always a concrete visual presentation which may have various formal features in common with what is being symbolized but which disguises the latter's dynamic significance. In fact, all of these mechanisms may be used defensively, since they produce changes that usually conceal the original meanings of the material on which they exert their effects. Thus, in the formation of dreams they work over the dream thoughts and transform them in ways that make these dynamically "hot" materials acceptable to the censoring influence of the Superego.

On the next higher level of generalization, in terms of metapsychology and the libido theory, the essential operation in all of these mechanisms is the *free mobility of cathexis*. According to Freud, every active idea has an energy charge, or cathexis attached to it. In the secondary process any particular idea's cathexis is bound to it. A thing is reliably itself; an orderly, stable, realistic view of the world becomes possible. In the primary process, on the other hand, the aim is to re-experience situations of gratification by the most *direct methods* possible, even if it means arbitrarily pushing ideas and percepts around so that contact with reality is lost. In energy terms, this means that an idea and its cathexis are easily parted.

The operations of condensation, displacement and symbol-formation

are by no means confined to the production of dreams and neurotic symptoms. They are conspicuously present in the language of schizophrenics; indeed, schizophrenia has been described as a state in which conscious mental life is dominated by the primary process instead of the secondary. Any weakening of the ego's controlling forces may result in the emergence of primary thinking: in reverie states, under the influence of drugs, in slips of the tongue, humor and so forth.

Third: the final point I want to underscore about the primary process has to do with humor and other enjoyable sides of life. It is one of mankind's great gifts to be *able* to abandon reality voluntarily for a little while; to shake free from dead literalism, to recombine the old familiar elements into new, imaginative, amusing or beautiful patterns. Among modern psychoanalysts Ernst Kris has been particularly interested in the functioning of the psychic apparatus in artistic creativity and humor. He has pointed out the fact that the ego of a mature and healthy person can at times relax, abandon secondary process standards in a controlled and recoverable way, and *use* the freedom and fluidity of the primary process productively; this he calls *regression in the service of the ego*. (6) A person who is not asleep and dreaming may therefore fragment and recombine ideas and images in ways that flout the demands of reality on either of two bases: because he cannot help it, due to a temporary or permanent ego-weakness; or because he *wants* to, for fun or for creative purposes, and is able to because he is not too threatened by his unconscious drives. Thus, the third point is that we find primary thinking in conscious subjects either out of strength or out of weakness. In the former case, it is more likely to be accompanied by pleasant affect, and a playful or esthetic frame of reference. If, on the other hand, primary thinking emerges in a break-

through, the subject may feel anxious or threatened and is likely to act defensively.

But why should the Rorschach test performance lend itself to analysis in terms of primary and secondary process? First, if one accepts the idea that thought processes may be arranged in a continuous series from the most primary to the most secondary, then we can apply these concepts to *any* sample of mental activity. We know, however, that anything obviously primary in character is exceptional when we are dealing with people who are not patients, so something more than an appeal to the general continuum principle is needed.

Taking the Rorschach is a situation with a number of more or less unique features that favor the emergence of primary modes of cognition. First of all, the subject is called on to produce a series of visual images. This is a preferred mode of operation for the primary process; without the requirement (which the TAT imposes) to produce a connected narrative, there is less demand for organizing and synthesizing and less necessity for secondary process thinking. Moreover, the ink-blot offers complex stimulus configurations, richly enough varied to evoke and support almost any kind of image that may be latent in the viewer's mind, yet without actually and unmistakably representing anything in reality. The permissiveness of the situation allows a person to produce percepts with any degree of fancifulness or realism, depending on his own internal standards of what he should be doing—and on what he can allow himself to produce, or fail to prevent himself from perceiving. The result is a task that one could hardly improve upon if he set out deliberately to maximize primary process influences on waking thought and perception.

Like many other clinicians I used these concepts unsystematically in diagnostic testing for some time, but it did not occur to me to devise a

scoring scheme to measure primary process until 1951 when I was preparing my contribution to *Advances in the Rorschach Technique*. (5) At that time I was struck both by the lack of attempts to systematize the application of psychoanalytic theory to the Rorschach, and by the suitability of this part of the theory of thinking to such a purpose. The first lead came via the first point just emphasized about the primary process: the drive-directedness of primary thinking. A passage in an article on ego-psychology by Hartmann set the wheels to turning. Discussing neutralization, he said that it meant not only "different modes or conditions of energy" (a notion that is difficult to make operational), but also "the degree to which certain other characteristics of the drives (such as their direction, their aims) are still demonstrable." (3, p. 87) As a first approximation, therefore, it seemed reasonable to suppose that a thought product was the result of neutralized cathectic energy to the extent that evidences of any kind of libidinal or aggressive aims were lacking in it. A rough scoring scheme was accordingly set up and tried out on a number of Rorschach protocols. A response was scored if the content itself or anything about its verbal elaboration involved any libidinal or aggressive aim. The ratio of all such responses to the total number of responses given was considered to be an "index of drive-directedness" of thought—one manifestation of the pervasiveness of the primary process in thinking.

The next step was to find an empirical application for this index, to see if it was measuring what I supposed that it did: what Hartmann has called "the conflict-free sphere of the ego." I have described elsewhere (5) how the attempt to understand the preliminary empirical results led to the notion of adding another scoring dimension, now embodied in the section of the manual on Control and Defense. It was essentially a recogni-

tion of the third point above, about regression in the service of the ego. To distinguish between primary process material that was in the Rorschach because it intruded in a threatening, ego-alien way, and that which entered in a controlled and often pleasurable manner, it was necessary to score indications of threat and of enjoyment, and also the use of humorous, artistic, and other "sublimated" controlling contexts.

Further reflection and reading on the theory of the primary process led to the next major addition: the formal categories, corresponding to point two in the preceding theoretical discussion. The material I used in framing concrete scoring categories was a group of thirteen Rorschachs that had been given by subjects in an experiment by my colleague, George S. Klein. He was studying the influence of need on cognitive processes in people who had different types or styles of cognitive control. (4) There were eight with *flexible control* and five with *constricted control*. Judging by the differences in their performance on various experimental tasks, it seemed reasonable to assume that *flexible control* would be correlated with a capacity for controlled and creative use of the primary process.

The protocols were scored blind for content and the few control categories available at that time, but after the identity of the cases was revealed, I searched the Rorschachs for differences in formal manifestations of primary and secondary processes, finding enough to warrant a cross-validation study with blind scoring of a larger sample (which is now under way).

Beginning in December, 1954, Dr. Joan Havel worked full-time for several months applying the manual to a mixed group of patients' Rorschachs, revising and expanding the scoring categories, especially those pertaining to control and defense. By now the manual is in its fourth revision and runs to about 40 single-

spaced typewritten pages, which is obviously too long to reproduce here, even if it had attained enough stability and proved usefulness to be worthy of publication. After we have completed the cross-validation study just mentioned on flexible vs. constricted control, there will undoubtedly be further revisions, some of them necessitated by an accompanying study of observer reliability. The manual will then be subjected to a test of validity, in which the criterion will be ratings by psychoanalysts of the degree to which the thinking of patients is pervaded by the primary process.

The present preliminary report will not present any data, therefore, only a little more description of the method and some of the problems that have been encountered in working with it.

CONTENT

Twenty-five different categories are used in the scoring of content; all of them are presumably indications of primary process thinking. It is assumed that if none of these categories is scored, the content of a response is mainly determined by secondary process thinking (although such responses may show formal deviations).

The 25 content variables may be grouped first into *ideational* and *affective drive derivatives*. Since the latter play a relatively small role, they may be disposed of first. Only instances where a display of affect occurs *instead of* a response to the blot are scored, and only when the affect is not merely an expression of anxiety about inability to satisfy the tester's (assumed) demands. The conceptual relationship between affect and the primary process is far from explicit in psychoanalytic theory, but it seems arguable that the affect is part of a primary thought process when it accompanies (and perhaps brings about) an inability to perform a secondary process function. Thus, the following is a scorable example: "All I can say

is it looks like a horrible mess to me."

Ideational drive representations are divided into the libidinal, aggressive, and a residual group, non-specific "anxiety or guilt about drive expression." Each of these is further subdivided into two levels, and the libidinal and aggressive categories are still further differentiated qualitatively. All of this elaboration of categories is for the main purpose of providing the scorer with a checklist, so that he will not omit any relevant types of drive-directed content. At present, we want only incidentally to get an exact count of (for example) anal responses, or those involving potential aggression. Nevertheless, it is obvious that these distinctions may be very useful in certain kinds of work, so we are trying to make the manual as clear and explicit in defining them as is possible.

How does one decide where to draw the line when classifying content? Once we have adopted the view that there is a continuum from primary to secondary process, we can hardly say about a single response that it either does or does not involve "the primary process." Perhaps a logical consequence of the continuum point of view would be to rate every response on a continuous scale for the *amount* of primary as against secondary process involved in it. Even this expedient would not take into account the phenomenon that Schafer has pointed out, that of "spread" along the continuum from primary to secondary. (10, p. 92) Some responses are in every way crude, poorly organized, and directly determined by drive (they would have very little spread along the continuum and would be located near its primary end); others may contain some drive content, and perhaps may have some of the formal features of the primary process, while at the same time being highly organized, accurately perceived, and cleverly rationalized (intermediary position on the continuum with a wide spread).

A kind of scaling complex enough to represent all of these considerations would be unmanageable and most probably unreliable. The decision was made, therefore, not to strive for any such precision, but to make do with some rough approximations. An inescapable minimum of arbitrariness entered into the cut-off points, and I shall not be surprised if some readers feel that certain kinds of responses have been unjustifiably omitted and others included without adequate reason, since it hasn't been possible to include here much explanation of the decisions that were made.

We started with the observation that some kinds of content, within any one qualitative category, seem more primary than others of the same oral, anal, etc. type. So Dr. Havel and I decided to distinguish a Level I, closer to the primary process pole of the continuum, and a Level II, closer to the secondary pole, although still patently drive-determined. The distinctions between the two levels may be generalized as follows.

First, there is involved a primitive vs. civilized dimension: the more that the type of drive-expression described or implied is socialized and discussion of it is appropriate to social communication between strangers in a professional situation, the more the thinking concerned is secondary, and we score Level II. Conversely, the more direct, intense, raw or blatant the drive-expression, the closer to the primary process, and we score Level I. The second criterion has to do with the degree to which the response focusses on the drive-relevant aspect of a larger percept, such as a particular organ. In addition, Level I actually includes a good many pathological fantasies, which differ from simple direct references to the form of instinctual gratification in question in that their "blatancy" is probably a function of defensive exaggeration. Perhaps also Level I responses combine aggression and sex more often than might be expected in hypo-

thetical conditions of direct instinctual gratification.

Some examples may make these distinctions clearer.

LIBIDINAL

LEVEL I

Oral: 'Breasts'; 'an open mouth'; 'hungry birds waiting for mother to bring something to eat.'

Anal: 'A pile of feces'; 'a person's backside.'

Sexual: 'Female organs'; 'intercourse.'

Exhibitionistic-voyeuristic: 'Human figure, nude.'

Sexual ambiguity: 'Some sort of symbol—phallic; not phallic, sexual—guess I'd say vagina'; 'men with breasts.'

Miscellaneous libidinal: 'Menstruation'; 'birth'; 'urine.'

LEVEL II

Oral: 'Two dogs kissing'; 'men, a little drunk, over a punchbowl.'

Anal: 'Bug in a mudpuddle'; 'a woman—here's one leg, her fanny.'

Sexual: 'A bride and groom standing, holding hands.'

Exhibitionistic-voyeuristic: 'Woman with a transparent dress on'; 'a face, leering up at something.'

Sexual ambiguity: 'Two people, I don't know if they're men or women'; 'two men, holding ladies' handbags.'

Miscellaneous libidinal: 'Ovaries'; 'embryo'; 'Cupid.'

AGGRESSIVE

Where possible, these responses are subdivided into subject-oriented (sadistic) and object-oriented (masochistic) types.

LEVEL I

Potential; subject: 'Something with snapping jaws—there's his hot breath coming out to get you' (*oral* scored secondarily); *object:* 'frightened figure—menaced, nightmarish.'

Active; subject: 'Witches tearing a woman apart'; *object:* 'sharp instrument going through the penis.'

Results: 'Animal, looks like it's been in a horrible fight—all torn up'; 'people with their heads chopped off.'

LEVEL II

Potential; subject: 'People arguing, swearing at each other'; 'cat's face, snarling'; 'a fist'; *object:* 'shield'; 'figure—looks afraid of something.'

Active; subject: 'People fighting or conspiring'; 'bomb bursting'; 'bull's face, charging';

object: 'an unhappy person—looks like he's being bawled out.'

Results: 'Blood'; 'man with a wooden leg'; 'dead chicken'; 'blackened trees after a fire.'

ANXIETY AND GUILT

LEVEL I

'Man tied, falling into space helplessly.'

LEVEL II

'The Inferno'; 'devil'; 'a pile of rocks, about to topple over.'

The manual contains definitions of each category, with many more examples than the above and discussion of borderline cases to be scored or not scored.

FORMAL ASPECTS

Primary process thinking was first defined in terms of certain formal characteristics. In considering how these might appear in responses to the Rorschach we thought first of the formal characteristics of dreams—condensation, displacement, symbolization. But there is obviously a considerable difference between Rorschach thinking and dream thinking. The Rorschach, being anchored in consciousness, provides only a very crude equivalent to the dream process. We cannot fully know—without associations and without some knowledge of the subject—what is condensed, what displaced, what symbolized in a Rorschach response; nor can we always know when such processes have occurred. Sometimes the work will have been so skillfully finished off by secondary processes (cf. secondary revision in the dream) that condensation and the like will be completely concealed. But we can catch those instances where the tool-marks of the primary process have been left on the finished product. Moreover, it seems reasonable to suppose that a person's failure to cover up the traces of the primary process in his thought and perception is a significant fact about him, in light of the general cultural pressure to "make sense," to see and think realistically and logically. Conceivably, *all* Rorschach responses may involve some elements of primary

process thinking, but our concern is not to track them all down: only to identify the amount that a person allows himself to express (or expresses in spite of himself) in the interpersonal relationship of the test situation.

In constructing the formal section of the manual we did not limit ourselves to a search for the types of formal deviations described for dream processes, though this was its starting point. With this general orientation, we tried to derive the scoring categories from the unique situation presented by the Rorschach. These categories refer both to the perceptual organization of the responses and to the thought process that underlies giving it. They attempt to measure deviations from the logical, orderly thinking grounded in experience with the real world that characterizes the secondary process.

The manual contains twenty-seven categories under the heading of formal aspects. Because they are less self-explanatory than the content categories, it would take a good deal more space to make them intelligible. Without the expectation of being completely convincing, therefore, I shall present each of the formal rubrics briefly and with an example.

The main aspect of condensation that one can hope to find in the Rorschach I have called *Image-fusion*: the failure to keep images separated in the way demanded by a realistic view of the world. Seven varieties of image-fusion have turned up. In four of them, the fusion comes about when more than one idea arises with respect to a single area of the card and the subject fails to suppress, at least temporarily, all but one image. In three types, the fusion comes about between adjacent areas and the subject has difficulty in delimiting a single percept.

Fusion of two separate percepts: No example will be given, since this is the familiar contamination response.

Internal-external views of something:

'Could be part of a woman's breasts with a bow in between . . . this might be the lungs . . . she might be wearing the bow around her neck.'

Partial fusion of separate percepts: 'Here we have what appears to be a French motif—French poodle—trimmings of the poodle or trimmings of the female—brassiere—high-heeled shoes' (Card III).

Unrelinquished percepts: 'It's supposed to be something in the cat's mind, but to me it looks like a ball of yarn.'

Composition: Parts from two or more percepts are combined to make a new, hybrid creation: 'A rabbit with bat's wings'; 'dogs—kind of antennae for a tail.'

Arbitrary linkage of two percepts: 'Women, sort of stuck together' (VII—attached at lower center).

Arbitrary combinations of separate percepts: Impossible—'Two animals holding a bridge in their mouth.' Improbable—'An idol, and music notes; a twelve-piece orchestra in back of him.'

We also operate on the hypothesis that *Arbitrary combinations of color and form* are an attenuated form of condensation, in which the fusion takes place between two modalities rather than within one: 'Red bears'; 'green clouds.'

Just as the free mobility of cathexis and the failure of ideas to maintain fixed identities in the primary process show up in condensation, so too they may logically result in the breaking up of natural perceptual units. It is tentatively assumed that the usual *Do* response (seeing a part where most people see a whole person, animal, etc.) represent this kind of *Fragmentation*.

Another guise that the assumed free mobility of cathexis may take is *Fluid transformation of percepts*, such as occurs when the S describes one thing turning into another before his very eyes: 'An Indian with a hide over him . . . now he's beginning to transform; as his hide droops down, it becomes two enormous feet. . . .'

We assume that the dream-work mechanism of symbolization is represented in the Rorschach by *Visual representation of the abstract*. Color may be used to stand for an abstract

idea as in the following: 'two dogs—the red makes me think of violence'; or 'the red is nature in the raw'; or *spatial relations* may be used similarly: 'intercourse, or union—I didn't think of a specific picture, everything is just united.' Finally, a general idea may be represented by a *concrete image*: 'An explosion, could represent anger.'

The failure of thinking to be logical is one of the hallmarks of the primary process. We score such failures only when the verbalizations are cast in a somewhat syllogistic form, and when the logic used is fallacious. Following Rapaport, we call this *Autistic logic*: 'Everything is so small it must be the insectual kind of thing.' The *DW responses* may be considered a subtype of autistic logic, since in the classic example of 'cat' for Card VI, 'because of the whiskers,' the implied syllogism is: cats have whiskers, this has whiskers, therefore this is a cat.

Illogical thinking leads to contradiction, which is tolerated in the primary process. We score three types: 1. *Affective contradiction*: 'Witches—could be a diabolic dance or chanting their chants—a very pleasant picture—could be music or love and enjoyment.' 2. *Logical contradiction*: 'Pagoda god—a peaceful evilness.' 3. *Inappropriate activity*: 'Mice—sitting back in armchairs with a cigarette.'

Rorschach workers are accustomed to see the primary process operating in a characteristic way that we call *Autistic elaboration*. This is a response verbalized in such a way as to indicate a great increase or loss of appropriate distance between the subject and the blot to which he is responding: it is essentially the same thing that Rapaport and Schafer call confabulation, but since that term is also used by many Rorschach workers to refer to the DW response, I am avoiding it altogether. 'That looks like maybe some Aztec god—a double-faced god, and it has been carried to a climate or placed in a refrigerator—

and the nose is all frozen up and ice has built over it and settled on it.'

After running across some examples of *Verbal condensation* (portmanteau words, like 'diaphragm,' a condensation of diagram and diaphragm), we decided to include the scoring of autistically distorted language in general. Following Rapaport, we distinguish *Peculiar* and *Queer verbalizations* and *Verbal incoherence*.

Finally, in a Rorschach response, one occasionally sees evidence of *Loosening in the conceptual organization of memory*: 'A bat—the winged bat, a bird, and I hate bats.'

CONTROL AND DEFENSE

It is evident that two people, giving the same Rorschach response, may have vastly different subjective experiences in doing so. One may, for example, show considerable discomfort in giving a response that juxtaposes two incongruous elements; another may be quite pleased with its fancifulness. Also, essentially the same kind of content may be presented by two persons in ways that indicate quite different degrees of control over the impulse represented in each. There seems to be a constantly fluctuating relationship between the two forms of thought, which must be kept in mind for the proper evaluation of primary vs. secondary thinking.

These considerations led to the development of a group of variables focussed on the subject's attitude toward the test and toward his own productions, and the extent to which he is master of or is mastered by the primary process elements in his thinking. These variables are grouped into the *Control and Defense* part of the manual; they are based on the way in which the subject gives a particular response. Each response that is scorable in terms of either the content or formal variables outlined above is considered with respect to the kind of control or its absence that goes along with it. In addition, we rate the record as a whole on the extent

to which taking the Rorschach is experienced by the subject as a pleasurable as against a threatening experience, using a five-category scale.

There are more control categories than any of the other kinds—40 of them in all. Moreover, they require even more discussion and exemplification to make it clear just how they are used, so I shall give a few in some detail and then merely indicate generally the other kinds of things that are covered.

The *context* in which a response is placed can do a great deal to make its primary process elements intelligible and acceptable as communications in the testing situation. Historically, man has developed certain specific contexts in which drive-related content or primary process manipulations of images or ideas may be expressed and accepted socially. Consider the *aesthetic context*, for example. The taboo on nudity is lifted for paintings and sculpture; thus, the voyeuristic impulse directly expressed in a response like 'a naked woman,' if given with no further justification, appears to be under some sublimatory control when the response comes out as 'the Aphrodite of Praxiteles.' Likewise, many bizarre image-fusions are found in the paintings of Hieronymus Bosch or Brueghel or in some of the modern surrealists. If a subject sees a composite figure in which human and animal features are condensed, therefore, but says that it is like one of the devils in a Bosch painting, he has found a place in social reality for an otherwise autistic creation.

Sometimes the attempt to control a response by putting it in an aesthetic context is so forced and unconvincing that we felt it desirable to distinguish between successful attempts (such as the ones just quoted) and unsuccessful ones, like the following: 'Witches of Macbeth, two more witches boosting them into a kettle.' There are, of course, witches in Macbeth, and the reference would have served to control the frightening implications of

this image, if it were not for the elaboration—Macbeth's witches did not push other witches into cauldrons, so the aggressive impulse that emerged in this response was not really controlled by the attempt to refer it to an aesthetic context.

Similarly, we distinguish successful and unsuccessful use of *cultural* (e.g., anthropological), *fairy tale*, *intellectual*, and *humorous* contexts.

Another kind of controlling or defensive maneuver that is scored as *Negation* is intrinsically less successful than some of the uses of context. This is scored when the content or formal element is presented in negative form: 'Lions, they don't look fierce'; 'if it's supposed to be a sex organ I fail to see it.' The last response also contains elements of *Projection of responsibility*, another relatively ineffective type of attempted control.

The other categories include *Introspection* (efforts on the part of the subject to remove himself from the responses by observing or thinking about his own thought processes), *Criticism of response* (a verbalized awareness that something is wrong with a response), *Vagueness of percept* (a complaint after the response is given that it can't be clearly seen), *Reaction formation and denial* (following a threatening or unpleasant response by qualifications that try to undo or prettify it) and *Inhibition* (scored when the content or formal deviation of the response emerges only in the inquiry).

The type of organizational control scored as Z by Beck I have included (following Friedman, 2) under two headings: *Combinations* (responses to discrete areas are brought together into a larger unity), and *Integrations* (differentiation of a blot area that is frequently seen as a unity, followed by a recombination of the dissected parts).

A number of categories are devoted to sequential effects, which take into account the modification or replace-

ment of one response by another that is either more or less primary in nature. Finally, a number of different indications that the subject is threatened by a response are distinguished, including aspects of verbalization, delaying and diverting tactics, expressive behavior, and card-handling. There is also a corresponding category for indications of enjoyment, relaxation, and the like.

A basic consideration in evaluating the degree of cognitive or intellectual control in the Rorschach has traditionally been the scoring of form level or accuracy. Likewise, some recent research by Friedman (2) has shown that some of Heinz Werner's concepts may usefully be applied in a type of form-level scoring that differs slightly from the traditional distinction between F+ and F-. Friedman found that his categories distinguished both children and schizophrenics from normal adults. Pending a clarification of the theoretical issues involved in relating the kind of genetically primitive perception described by Werner to the Freudian concept of primary process, we are using Friedman's categories of *Amorphous responses*, *Vague responses*, and *Mediocre responses*, but have made some slight modifications in his other categories. We have separated the identification of combinations and integrations from form level scoring, merely distinguishing *excellent form responses* from the ordinary, mediocre ones with acceptable but undistinguished form accuracy. Likewise, within the realm of F-, we distinguish two degrees of inaccuracy: *Arbitrary form responses*, and *Absurd form responses*.

On the whole, then, this treatment of form-level represents a compromise between the somewhat similar systems of Friedman and Rapaport (2, 9).

A NOTE ON RELIABILITY

To date, only some preliminary figures on observer reliability can be given; the manual has been going

through too many revisions for much experience to have accumulated on the degree to which scorers agree in using the categories. For what they are worth, however, the following figures are based on twelve cases scored independently by myself and by my assistant, Anthony Philip, during the course of his training in using the method. For 58 of the categories (which have remained substantially unchanged while we worked through the 12 cases), we agreed on 99 percent of the scores assigned. I should hasten to point out that 98.6 percent of the instances were agreements that the category in question did *not* apply to a response. If we take as a base only responses on which one or the other of us scored something, the proportion of agreement is only 52 percent. Even so, however, in less than three percent of those scoring instances were categories confused; about 45 percent of them were disagreements in which one of us found a category applicable while the other scored nothing.

There is, of course, considerable difference between the reliability figures for various categories. There were over a dozen categories scored by neither of us for 394 responses, which is perfect reliability—of a kind. So far, there are more categories (among the infrequently-appearing ones) with complete disagreement than complete agreement, but we are confident that the improvement in the manual and the period of training will soon pay off in satisfactory agreement on almost all categories.

CONCLUDING REMARKS

There can be little novelty in an attempt to apply psychoanalytic concepts to Rorschach testing; Rorschach himself was influenced by what he had read of Freud, and his collaboration with Oberholzer helped to give Rorschach interpretation a psychoanalytical orientation from the beginning. Many readers will feel that the sorts of considerations outlined here

have been for years familiar parts of their regular clinical practice with the test.

What my colleagues and I have done has been to take the application of psychoanalytic theory to the Rorschach out of the clinic and make it explicit and orderly enough for systematic scoring. We are, of course, using this system only in research at present. It seems not unlikely, however, that this attempt to apply a number of Freud's most fruitful concepts as rigorously as possible may some day return to the clinic a tool with increased precision and incisiveness.

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Transference in the Patient's Reaction to the Tester¹

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In the minds of those interested in psychoanalysis, recent research findings concerning the influence of the tester on the test results inevitably raise questions concerning the relevance of the concepts transference and countertransference to these findings. This discussion will deal only with the relevance of transference. The psychological analysis will concern only those elements of the test situation that seem to foster transference reactions and those that work against them.²

Transference in the psychoanalytic relationship will serve as the model for this analysis. The test situation held up for comparison to this model will be that of a patient taking the Rorschach test during an initial total psychiatric evaluation.

I

To begin with, a few remarks about

¹ A somewhat revised version of a paper read at the 1954 annual meeting of the Society for Projective Techniques.

² A fuller discussion of the psychology of the tester as well as of the patient being tested will be found in Schafer (6), Chapter 2. Here it must at least be mentioned that the tester's countertransferences (his historically-rooted neurotic reactions to patients' transferences), his ready-made transferences to patients as a group as well as to patients of different age, sex, cultural background, value orientation and psychiatric syndrome, his way of coping with his own pathological trends, and the irrational elements of his responses to psychiatric colleagues, all constantly endanger the objectivity and roundness of his test analyses and the effectiveness with which he communicates the results of these analyses. Intermingled with these problems, and fostering them, are the problems of maintaining self-esteem, professional security and interprofessional rapport under the present historical circumstances of fluidity and controversy in theory and practice. Additionally there are the inescapable problems created by variations among testers and psychiatrists in their talent, training and experience.

our model, the psychoanalytic treatment situation. In recent years psychoanalytic writers have become more interested in therapeutically potent factors inherent in the analytic situation itself. Among other variables, these writers have concerned themselves with the givens in the treatment situation that stimulate and enhance transference manifestations, givens that ultimately help bring about the transference neurosis. "Transference neurosis" implies more than quantitatively intensified or extended transference reactions, that is, misunderstandings of the present in terms of the past. Transference distortions may intrude into all human experience; they are not restricted to the psychoanalytic treatment situation. The concept "transference neurosis" refers specifically to a regressive alteration of psychic functioning within the psychoanalytic situation. By means of this alteration the analyst's emotional relationship to the analyst becomes so laden with expressions of pathogenic, unconscious, infantile instinctual conflicts that his need for other neurotic expressions of these conflicts is greatly reduced. In time, the transference neurosis more or less absorbs the energies of the "true" or original neurosis, although it is, of course, made of the very same stuff.

The question being asked in some recent psychoanalytic writings is this: What are the givens or constants in the analytic situation itself that foster this intense, pervasive, regressive transference neurosis? This question bypasses, but does not minimize, the fundamental contributions made to the transference by the persisting infantile conflicts pressing toward expression and repetition, by the actual unique interaction of a specific ther-

apist personality and a specific patient personality, and by the patient's misapprehensions concerning psychoanalysis based on his general impressions and on the manner of his referral for treatment and his introduction to it.

Gill (2) has stressed the following elements of the analytic situation as "unremittingly accelerating and deepening" the regressive transference: "... the (patient's) recumbency and inability to see the analyst who sits and may look, with the inevitable accompanying sense of being inferior; the frustration by silence and through other techniques; the awakening of strong needs without gratification; the absence of reality cues from the analyst; the general atmosphere of timelessness, with the relative disregard of symptoms and the taking of the whole personality as the relevant province of activity; free association, bringing into the field of consciousness the thoughts and feelings ordinarily excluded from the usual interpersonal relationship; the emphasis on fantasy; and last but not least the frequency of visits, which, metaphorically speaking, we may regard as the constant irritation necessary to keep open the wounds into the unconscious, and indeed as a general strong invitation to become dependent, to regress, and to feel safe enough to do so because there is time enough and stability and frequency." From MacAlpine's somewhat earlier discussion of this subject (4), we may abstract the following additional factors: the ego-regressive effect of curtailing the stimulating object world during the analytic sessions; the elements of fixed routine and discipline in the analysis which are reminiscent of infantile routine; diminished personal responsibility in the analytic sessions; and the full sympathetic attention of another being which leads to expectations in the patient of being loved, praised, indulged, controlled, guided, confided in, forgiven or even punished—these expectations being followed by disil-

lusionment, and then, in response to this frustration, by regression. The nature of the interpretations offered, aimed at bringing infantile residues to unequivocal expression, must be stressed too, of course.

While these considerations are not systematically coordinated and do not exhaust the complexities of the psychoanalytic situation, they make plain the type and range of variables relevant to a psychoanalytic study of clinical situations.

II

How do these considerations apply to the Rorschach test situation? Recent Rorschach research has emphasized the influence of specific personality trends, such as hostility and anxiety, on the test results. Accordingly, this instructive research falls in the domain of the study of transference readiness brought into the test situation: it does not clarify dynamic factors inherent in the test situation itself. The present discussion must therefore be based partly on varieties of observed test behavior, partly on clarifications during therapy of reactions to testing, and partly on transposition from psychoanalytic discussions of comparable situations. It must be stressed that we will be concerned largely with the patient's more or less latent, irrational, magical, dramatized conceptions of the test situation; we will take for granted his realistic appreciation of the possible advantages to be gained from taking the tests and his objective perception of the tester as a disinterested professional consultant. In other words, we shall be concerned with reactions following the lines of the so-called primary process modes of thought rather than the logical, realistic secondary process.

The following givens or constants seem to characterize the psychological position of the patient taking the Rorschach test during an initial psychiatric evaluation.

1. A large element of free imagination, hence of fantasy, is encouraged

in the response process. On the strength of the patient's wish to respond and in order for him to be at all creative in responding, there then takes place some regression in the patient's level of psychic functioning. To a limited, more or less ego-regulated, but still significant extent this regression allows derivative representations of unconscious, rejected tendencies increased access to consciousness.³

2. At the same time the patient is relieved of much of the responsibility for the content of his responses, since with more or less justification he can put considerable responsibility for what he sees on the presence of rather fantastically rendered test stimuli and on his obligation to deal with these stimuli somehow. This opportunity to externalize responsibility and to ward off superego anxiety further deepens the reaches of consciousness and tends in subtle ways to infantilize the patient's emotional position.

3. The test requires communication of intimate, even if not immediately revealing material without a basis in trust in the relationship with the tester. Where therapy may be patient and tactful in this respect, testing is abrupt and demanding. This rude psychological intrusion by a stranger (the tester) stimulates in the patient an anxious sense of violated privacy, emotional vulnerability and defenselessness.

4. Even though objectively the examination is not concerned with moral judgments, its evaluative nature stimulates fears of being harshly judged, shamed and punished. One's worth as a person seems to be being weighed, and superego projections may flourish—especially when restrictions of response develop because of anxiety or limited assets. Patterns of behavior deriving from archaic authority problems may then be exaggerated. Schachtel's contribution (5) to this point and to the following is most valuable.

5. The absence of cues from the tester as to the desirability of this or that mode of response or content of response, together with the frustration of the patient's greater or lesser efforts to get the tester to structure the task thoroughly with rules, standards, or approval, fosters anxious uncertainty and feelings of abandonment or, as Baer (1) has put it, in discussing the threatening effect of the meaninglessness of the inkblots, fear of "loss of objects." The patient's uncertain and isolated position will stimulate relevant and persisting infantile anxiety and will thereby increase his readiness to misperceive the tester regressively as an archaic parent figure.

6. A significant loss of control occurs in this interpersonal relationship due to the tester's setting the basic conditions of test performance, such as the type and number of stimuli to be dealt with and the general task to perform. Diminished control in relationships and problem situations threatens the maintenance of one's accustomed modes of maintaining self-esteem, establishing defensive security and achieving impulse gratification. The patient's resulting sense of helplessness and vulnerability in this respect has its regression-stimulating aspect.

7. The danger of premature self-awareness also hovers over the response process. This is because, consciously or preconsciously, the patient is attempting to interpret his responses as he goes along. The concurrent probing psychiatric evaluation during the initial work-up period, plus the patient's sense of desperation in his current life crisis, may well exaggerate the impact of these self-analytic efforts. These efforts may be crude, highly intellectualized or incorrect. Together with the stimulated freedom of self-awareness and the absence of external restraining cues referred to above, the self-interpretive efforts expose the patient to disturbing conclusions about what is "wrong" with him.

³ cf. Kris (3).

8. Last to be mentioned here is the general temptation existing in all clinical relationships to regress to archaic modes of interaction and mastery. The tester, as an extension or surrogate of the therapist, who in turn is a surrogate of the important familial figures, may be responded to and communicated with in the language of transference rather than reality. Not infrequently, transference messages are meant to be sent through the tester to the therapist.

As a result of these constants in the test situation, and others no doubt may be added to the list, a significant amount of intrapsychic and interpersonal temptation, frustration and anxiety is stimulated. In consequence of these disruptive feelings, the tester may well take on looming qualities, such as those of an omniscient, omnipotent, controlling, judging, possibly loving and rewarding but possibly disapproving and punishing parent or sibling. The specific qualities ascribed to him will be determined largely by the historically-determined structural, dynamic and economic configuration characterizing the patient at the time of testing. This same configuration will also determine a good part of how the patient then deals with the tester and his test. These transference-colored reactions to the test and tester are usually seen most clearly in the behavior of severe neurotics, borderline cases and psychotics. Under these situational pressures, such patients are poorly able to maintain tentative trust, controlled and constructive self-criticism, reflectiveness, concentration, humor, initiative, perseverance, co-operation, productivity, resiliency in the face of difficulty, feelings of conviction and effective verbal communication—the signs of higher-level ego organization. Disruption of these ego functions thus serves as an important indication of ego weakness. In contrast, the manner in which many moderately well-integrated neurotics take the test is relatively non-disrupted, impersonal and opaque with respect

to archaic reaction tendencies. The latter patients appear to be better able to respond to certain counterregressive, transference-impeding, more or less realistic givens in the test situation. The progressive rather than regressive pressures must also be clarified if we are to understand the setting in which projective test responses are formed. They include more than the patient's correct recognition of the tester as a disinterested consultant.

III

The counterregressive, transference-impeding constants in the usual test situation appear to include the following: (1) the reassurance against traumatization provided by the obvious transiency and relative remoteness of the patient's relationship with the tester; (2) the security in communication fostered by the virtual absence of explicit, direct communication by the patient of highly-charged, autobiographic material; (3) the ego-mobilizing effect of the at least implicit demand in the situation that the test responses be perceptually, logically, and verbally adequate; (4) the support provided by the maintenance of face-to-face interaction, when the testing is carried out in this manner; (5) the unavailability of the tester's interpretations of responses, so that explicit and public self-confrontation is not enforced and sharpened within the test relationship as it is in therapy; (6) the presence of a specific external stimulus and externally-defined task requiring maintenance of ordinary perceptual vigilance at least.

These and other factors seem to limit the patient's freedom of fantasy and the extent of his creative ego-regression during the response process. They focus a good part of his attention on a piece of external reality; he is not simply or primarily pushed toward reveries, memories and associations undirected by usual modes of conscious thought. Thereby the development of intense transference reactions is retarded and the formation

of a full-blown transference neurosis is obviously precluded. These same considerations may be applied to the understanding of why projective test responses cannot be treated as if they were dream material.⁴

The upshot of these transference-inducing and transference-impeding, regressive and counterregressive pressures in the test situation seems to be the formation of a rudimentary, restricted, often inconspicuous but sometimes dramatic transference reaction to the tester. The relatively standardized nature of the test situation is crucial in this respect since it highlights even subtle manifestations of irrational, transference-colored behavior and attitudes. Such behavior and attitudes will be observed not only with respect to the tester and his situation but with respect to the test responses themselves and they will be reflected in the vicissitudes of the response process. While by no means representing a full-blown transference neurosis, these rudimentary transference manifestations will inevitably express the patient's fundamental libidinal, hostile, defensive, moral and adaptive reaction patterns. Dynamic continuities of this sort have been solidly established by psychoanalysis.

IV

What conclusions may we draw from considerations such as these? First of all, we should not set behavior and attitudes in the test situation apart from the test responses proper, neither in our interpretations nor in our test reports. Instead we should interpret behavior and attitudes as crucial aspects of the response process. We should make sure, however, that the test scores and content and their sequence provide independent support for these interpretations, or at least that the scores and content form a meaningful configuration with what we take to be the implications of specific test behavior and attitudes. We

must also be careful not to commit ourselves rashly to overspecific inferences concerning real figures and experiences in the patient's life. As testers, our legitimate objects of study are always existing psychic structure and major dynamic trends operating in varying strength in the present. It is these structural, dynamic and economic factors that are highlighted by the constants in the test situation. Thus while we may often speak with confidence of a particular patient's distinctive readiness to form dependent, demanding, seductive or sadistic relationships, or of his determined intensification of repressive, intellectualizing or other defenses in reaction to stress, we may rarely justifiably conclude that these modes of relationship are limited to the real mother, father, or siblings, or that they were laid down by specific past interactions with them. Here we come up against subtle patterns of displacement, defensive regression, and layering that becloud the representation of actual past and present object relations. We may, of course, attempt to describe what the patient emphasizes in his current conceptions of significant figures out of his past.

A second conclusion to be drawn from the preceding analysis of the test situation is that our interpretations, which are, in a basic sense, predictions, should be restricted in scope in two respects. First, concerning the overt forms of expression of interpreted trends, these can be safely predicted only in situations that involve variables operating in the test situation too, such as the relative absence of rules, diminished control over external events, intimacy without a basis in trust, and others listed above. But even with respect to situations that match the Rorschach test in their stressful, regressive, transference-inducing aspects, the predictions of overt behavior must remain tentative and general; in this way allowance is made for the selective, not entirely controllable impact of particular ex-

⁴ cf. Schafer (6), Chapter 3.

ternal personalities and circumstances. Our predictions are guided by character structure but limited by fate. As regards specifically anticipating the patient's reactions to therapy and to his therapist, it must be remembered that the therapist's role is complex; its elements vary in prominence depending on the patient's problem, the therapist's personality and competence, the choice of therapeutic technique, and the phase of the treatment. These elements of the therapist's role include his being interpretive, clarifying, appreciative, detached, encouraging, disciplining, educating, and possibly misleading, confusing, seductive and punitive. To each of these elements the patient may respond for a time with a partial or total shift in his transference. So far as possible, therefore, predictions from test results to transference phenomena during therapy, if they are made at all, should try to be specific about conditions facilitating or hampering these phenomena. Predictions simply in terms of "cure" or "success" grossly oversimplify clinical life.⁵

The second restriction of prediction to be respected follows from the observation that many of the trends we interpret are latent and partial. The ultimate form of expression of these trends is determined largely by their place in the total personality, that is, in the individual's hierarchy of drives, defenses, controls, values, assets, and his past, present and foreseeable relationships and life opportunities. Without a thoroughly worked out picture of the patient's personality, the disposition of many partial and/or latent trends cannot be safely predicted.

Recognizing these two limitations of prediction based on Rorschach test findings leads to a fuller appreciation of the value of using a battery of tests. Through a battery of tests we observe the patient's ego at work in a variety of problem situations, and we observe this work not only in test

scores and content and their sequences but in reactions to the tester and the test situation. Having more than one tester see the patient may also enrich the behavioral and attitudinal findings. In these ways we may survey the extent, intensity and variety of the patient's readiness to react regressively with particular types of transference. With the help of such a survey we may better assess the patient's adaptiveness, reality testing, anxiety tolerance, capacity for self-confrontation and other major aspects of his ego strength.

Finally, the preceding analysis of the test situation indicates that we should not be alarmed or discouraged by recent research findings that the tester may influence the test results. The test situation is dynamic and not static; its dynamic nature helps account for the fact that our instruments are so revealing of personality and pathology. In addition, experienced testers tend in practice to develop individual baselines as to how much or how little shading, color, form or movement is to be considered unusual. Deliberately or unwittingly they adapt their rules of thumb to their individual styles of test administration and the usual reactions these elicit. So long as we keep our interpretations extensively rooted in all aspects of the test results and so long as we formulate results with appropriate tentativeness and without overgeneralizing, we need not be excessively concerned with what are, after all, the limited distortions of single scores so far demonstrated by research. Freud's discoveries and particularly the recent developments in his ego psychology appear to provide the most searching and comprehensive means we have of understanding and capitalizing upon the total Rorschach situation.

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Defense Preferences in Four Countries

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A traveler entering a foreign country, even for the first time, usually has a set of preconceived notions about the personality characteristics of its inhabitants. The people of certain countries are stereotyped as "cold and aloof," others as "warm and friendly," still others as "repressed and inhibited," and so on. Somehow the process seems to aid in satisfying the stranger's need to structure his interpersonal field. The origins of such preconceptions are probably impossible to track down—they may vary all the way from a carefully conducted survey of opinion to the casual comment of a fellow tourist. Perhaps the very persistence of national stereotypes through the years is suggestive of their validity. Or, on the other hand, it may be that selective perception focuses on consistency and ignores variability. Rationalization undoubtedly plays its part too—"the ones we met weren't typical."

In the course of a nine months' stay in Europe², the writer was continually exposed to thumbnail sketches of "national character," adopted and transmitted his share, and also managed to collect some exploratory data on the topic. The latter, comparisons of responses made by college students in four countries to a projective measure of defense preferences, are described below.

METHOD

The Measuring Device

The assessment device used in this study was the *Defense Preference Inquiry* (Form M53) for the Blacky

Pictures. The purpose of the DPI is to tap defensive reactions to psychosexual stimuli in an indirect but objectively scorable fashion. The subtlety of the approach lies in the fact that the subject is asked to judge a series of alternatives (each an operational definition of a defense mechanism) in terms of "how well they represent the way Blacky seems to be feeling or acting" in a particular picture—in other words, encouraging him to identify with Blacky and thereby reveal his own personal reactions. Spontaneity of response is further facilitated by very short time limits, which preclude the possibility of careful deliberation in assigning the ranks. Objectivity of scoring is achieved by having the subject simply rank-order a given set of statements for each dimension.

The first study to make use of this method was done by Goldstein (5) in 1951. The latter explored the consistency of defense preferences among a mixed group of male and female undergraduates and also the interrelationships of choices among the defenses themselves. This first version of the DPI, which came into being only after a painstaking series of preliminary tryouts, utilized eight of the Blacky pictures. The four mechanisms operationally defined for each of the psychosexual dimensions were repression, reaction formation, projection, and regression. The face validity of each statement was established in advance by judges' ratings, and the differential popularity of statements within a set of four was minimized by a process of trial and revision. It was necessary to attempt to meet the criterion of roughly equal group choice among the four statements because any extremely popular or un-

¹ The writer is indebted to Dr. E. Lowell Kelly for a number of editorial suggestions in the preparation of this manuscript.

² Made possible by a Fulbright Research Scholarship to Italy for 1954-55.

popular item would tend to mask the influence of personality factors in the subject's responses. The aim of the research was to examine individual differences in defense preferences and the criterion of equal mean choice permitted a greater spread of responses.

Goldstein found that most of his subjects tended to prefer a variety of defenses across the eight dimensions, e.g., repression on Oral Eroticism, reaction formation on Oral Sadism, projection on Oedipal Intensity, and so forth. However, a significant minority tended to choose the same defense, regardless of the conflict dimension. These people with "rigid" preferences he labeled "general defenders." The latter group also turned out to show more disturbance in their spontaneous stories for the Blacky pictures (1). In analyzing the relationships among the defenses he discovered a mutual affinity between choices of repression and reaction formation on the one hand, and between projection and regression on the other.

The next investigator to employ the DPI was Sinnott (10), who sought to relate the assigned defense ranks to the ordering of statements based on conflict-laden stories comparable to three dimensions of the Blacky, and to the recall of story content depicting the various defense mechanisms. Primarily a methodological study, this research pointed to two important considerations in the evaluation of DPI items for subsequent revision—differential plausibility and face validity.

Shire (9) utilized the DPI in a more intensive analysis of the personality characteristics of the "general defender" in contrast to those of the more prevalent "specific defender." The former proved to be, as predicted, significantly more maladjusted than the latter on two genotypic measures — the Munro Inspection Technique for the Rorschach and the spontaneous stories on the Blacky. On the more phenotypic Guilford-Martin

GAMIN those general defenders in the repression and reaction formation categories turned out to have significantly high facade scores, i.e., they were defensive in filling out the inventory in an effort to "look good" even though their responses were anonymous. With respect to rigidity, there were no differences between the defender types on two measures — a Rorschach rigidity scale and the California F-Scale.

Fourth in the succession of DPI studies was one by Segal (8) involving the prediction, based on type of defender, of attitudes expressed by college girls toward their mothers during a personal interview. As expected, those girls in the general defender category were less able than the specific defenders to express feelings of hostility or dependency toward their mothers despite the fact that the two groups had been equated on the basis of TAT and Blacky stories for strength of hostile or dependent impulses.

More recently a revision of the instrument (Form M53) was used at the University of Michigan in a large-scale program, sponsored by the National Institute of Mental Health, designed to investigate the relevance of conflict intensity and defense preference to behavior. In the course of a year's assessment of all members of an undergraduate fraternity these two personality variables were related to a wide array of diverse behaviors in order to test their purportedly genotypic character. Included were measures of perception, cognition, humor, values and interests, intellectual performance, attitudes, physical complaints, and interpersonal behavior. Among the DPI defenses, predictions concerning avoidance (repression-denial family) were most readily provided by psychoanalytic theory. These predictions were generally borne out, for avoidance preferences were found to be significantly associated with: (1) perceptual defense in a task involving tachistoscopic presentation of the

Blacky pictures (7); (2) forgetting the pictures in a series of recall tests; (3) picking neutral rather than conflict-relevant solutions in word-completion and anagram experiments; and (4) in conjunction with high conflict, poor recall of pertinent humorous cartoons (11). Two less crucial hypotheses were not confirmed: disliking pertinent humorous stimuli; and preferring simple to complex figures on the Barron-Welsh Art Scale. For the remaining defenses the data were treated largely in exploratory fashion, with only isolated predictions possible. Some highlights growing out of these analyses were the negative interpersonal reactions of paired individuals sharing a preference for projection; the significant relationships of projection choices with high conflict and reaction formation with low conflict; and the association of regression preferences with liking pertinent cartoons and jokes.

The revised DPI was also employed in the present research. For each of the eleven Blacky pictures, the subject is asked to rank five alternative defenses: avoidance (the generic term coined for the repression-denial family), reaction formation, projection, regression, and intellectualization (a common form of isolation). A typical list of psychoanalytic defense mechanisms (cf. Fenichel (4)) includes, in addition to the above, sublimation, undoing, and introjection. Sublimation was written off as a defense whose ascribed theoretical importance is exceeded only by the elusiveness of its measurement; undoing was excluded because of its intimate relationship to reaction formation; and attempts to compose introjection statements resulted in nothing more than a series of superficial repetitions of Blacky imitating his parents.

Serial positions of the five defenses are rotated in a seemingly random but actually systematic manner throughout the inquiry. Neutral alternatives are omitted for several reasons: (1) a primary interest in *relative*

defense preferences; (2) the suspicion that a neutral or no response category would be used excessively as an evasion of the defense items; and (3) the theoretical difficulty of constructing a "neutral" response to a stimulus which evokes psychosexual conflict.

The following is an illustrative set of DPI items to be ranked according to "how well they fit" Picture II (Oral Sadism). The latter depicts Blacky chewing vigorously on Mama's collar.

- (Rg) A. When Blacky gets angry, he often throws a temper tantrum like he did in his earlier days.
- (RF) B. Blacky tries to pretend that he's ferocious, but when Mama is around he is sure to be overly gentle, calm, and well-behaved.
- (Int) C. Blacky is a firm believer in the idea of releasing one's aggressions, so he feels justified in ripping Mama's collar here.
- (Av) D. Blacky is so intent on chewing the collar to pieces that he doesn't even realize it belongs to Mama.
- (P) E. In Blacky's own way of thinking, his family has been treating him so unfairly that he feels entitled to chew up the collar.

The issues of reliability and validity raise problems common to all projective techniques. Though a retest is not a highly satisfactory approach to reliability, it does convey useful information. In the fraternity study described above, the DPI was readministered after intervals of three to four weeks, with a resulting product-moment correlation between item ranks of .45. Of the first choices on one administration, 73% occurred as either first or second choices on the other. Last choices proved to be almost as stable as first choices. Mem-

ory very likely is not a major factor, since 55 items were responded to in a total of approximately 8 minutes. Data on hospital patients, retested after one week, reveal a correlation of .46 and virtually identical percentages of stability.

The validity of the instrument is of greater concern. What degree of confidence can we have that the items, intended as operational definitions of defense mechanisms, are fulfilling their purpose? The establishment of face validity by judges' ratings is obviously only a minor first step. The answer must be sought, as suggested in an early article on the Blacky technique (2) and expounded in detail recently by Cronbach and Meehl (3), within the framework of "construct validity." If a particular device which seeks to measure a theoretical construct is successfully employed in a wide variety of predictions, support is achieved for both the underlying construct and the method of measurement. In the case of the DPI we can say that existing research evidence is encouraging. More specifically, the significant associations of avoidance preferences with a number of predicted behavioral criteria, mentioned earlier, lends strong support to the validity of the avoidance items. Evidence for the other defense items can best be characterized as still in the "suggestive" stage.

Subjects

The subjects in the present study were male college students, primarily undergraduates, distributed among four countries in the following numbers: 54 in Italy, tested at two leading universities located in the northern and central sectors; 71 in England, tested at a prominent university in the eastern part of the country; 28 in the Netherlands, from a metropolitan university; and 77 in the United States, from a large midwestern university. All "volunteered" for the experiment in the sense that they were not required to attend, though varying degrees of pressure from instruc-

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tors were probably applied. Sophistication with respect to psychoanalytic theory and defense mechanisms was generally negligible.

Procedures³

With a few exceptions, procedures were comparable throughout the four countries. All testing was done in groups by male examiners, with slides of the pictures projected on a screen and individual test booklets for subjects to record their stories and DPI rankings. The oral instructions were as follows:

We are going to show you a series of pictures about a puppy named Blacky—something like the cartoons of Walt Disney except that these are not moving pictures. We will present one picture at a time and the idea is for you to make up a little story about each one—just tell what is happening in the picture, why it is happening, etc. Since this is sort of a test of how good your imagination can be, try to write vividly about how the characters feel. You will have *two minutes* for each story, which means about one or two paragraphs on each cartoon. It is desirable to write as much as possible within the time limit. A warning signal will be given when there are only 30 seconds left to finish a story.

After the two minutes for the story is up, you will be asked to turn the

³ Acknowledgment is made to the following individuals, without whose generous assistance this study would not have been possible: Dr. Renato Sigurtà, who translated the DPI into Italian and administered it on several occasions; Dr. Leonardo Ancona, for his recruiting of subjects in one Italian university; Dr. Franco Ferracuti, who recruited subjects in the other Italian university and administered the DPI to them; Dr. H. C. J. Duijker, for making Dutch subjects available; Drs. Merle Turner and Russell Hanson, who arranged for the testing of subjects in England and Dr. Robert Shellow, for permitting the inclusion of data collected by him in the United States. All administrations in England and the Netherlands, and the majority in the United States were conducted by the writer.

page, where you will find a series of five statements describing some possible feelings or reactions of Blacky in the cartoon you just saw. We want you to rank these statements as to how well you think they represent the way Blacky seems to be feeling or acting in that situation. Naturally, there are no right or wrong answers involved. Just write a "1" alongside the statement that fits best, a "2" alongside the second best, a "3" for the third best, a "4" for the one that fits fourth best, and a "5" for the one that fits worst. Regardless of how well or poorly the statements seem to fit, be sure to rank them all from 1 through 5. *Never leave a statement unranked.* You will have 45 seconds for each set of rankings, so you'll have to work rapidly. There will be a warning signal when only 10 seconds are left.

Remember, then, for each picture you will have two tasks—first to write a two-minute, imaginative story about how Blacky is feeling or acting, and second to rank-order the five statements about the picture. Never turn a page until we give the signal and never look back at what is already done. After the story, do not turn the page to the five statements until we tell you to.

Some of the U. S. subjects took the DPI a few weeks after the standard group Blacky and therefore were shown the pictures again only briefly and not required to write new stories. The U. S. groups also were tested with no females present, whereas all sessions in the other countries were mixed. The Italian students were administered a literal translation of the DPI, but were allowed an extra 10 seconds for each set of rankings to compensate for the slightly longer statements necessitated by the translation. The Dutch students, able to read English but not rapidly, were also given 55 seconds for their rankings and were allowed to write their spontaneous stories (included to insure ego involvement) in Dutch.

RESULTS

The most obvious method of analyzing the data is simply to compare the mean ranks assigned to the various defense mechanisms in the four countries. It must be kept in mind, however, that an approach in terms of central tendency is not sensitive to individual differences and consequently provides the optimal setting for a demonstration of group differences. Table I presents the mean ranks of defense preferences of the four countries on each of the eleven Blacky dimensions⁴ and also their overall means.

In Table II these mean ranks are translated into a sign summary which permits more ready analysis. The middle range from 2.80 through 3.20 was designated on an a priori basis as "neutral (O)"; ranks higher as indicating "preference (+)"; and lower as indicating "aversion (-)". The most striking national differences occur on the eleven avoidance items, where the Netherlands shows 9 preferences, England 6, and the United States and Italy only 2 each. By means of Fisher's Exact Test (two-tailed) it is seen that these differences are clearly significant in the case of the Netherlands versus the other groups combined, and that a trend toward significance exists in the comparison of England versus Italy and the United States combined. No statistically significant trends appear on the remaining four defense categories, though a slight overall tendency is noted for the Netherlands to express an aversion toward regression.

From the sign summary in Table II one can derive a crude index of dissimilarity of preference among the countries (see Figure 1). By pairing the 55 mean preferences of each coun-

⁴ The defense alternatives on Picture VII (Blacky admonishing the toy dog) concern reactions to the overt expression of aggression rather than the identification process, which the picture is intended to convey in the standard Blacky.

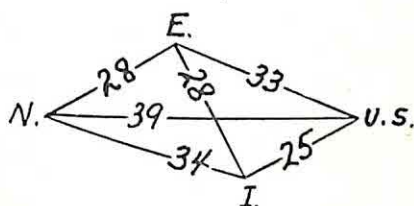
TABLE III — Intra-Country vs. Inter-Country Agreement
(Average Rhos)

Blacky Dimension		Italy	England	Nether-lands	U.S.	Inter-Country Agreement
(Oral Eroticism)	I	.041	.140	.112	.005	.025
(Oral Sadism)	II	.046	.003	.029	.034	.023
(Anal Sadism)	III	.045	.013	.057	.029	-.007
(Oedipal Intensity)	IV	.026	.058	-.010	.132	.067
(Masturbation Guilt)	V	-.012	.089	.054	.092	.035
(Castration Anxiety)	VI	.010	.012	.052	.002	.001
(Overt Aggression)	VII	.000	.082	.013	.071	-.003
(Sibling Rivalry)	VIII	.088	.103	.003	.045	.046
(Guilt Feelings)	IX	-.003	.030	-.012	.088	.023
(Ego Ideal)	X	.097	.123	.117	.063	.076
(Love Object)	XI	.122	.058	.031	.243	.116

LEGEND

Combining Sign Differences

- vs. — = 1
 ○ vs. + = 1
 — vs. + = 2



Dissimilarity Index

- It. vs. U.S. = 25
 Eng. vs. Neth. = 28
 It. vs. Eng. = 28
 Eng. vs. U.S. = 33
 It. vs. Neth. = 34
 Neth. vs. U.S. = 39

FIGURE 1

An Index of Country Dissimilarity

try with every other one, it seems that the Netherlands and the United States are most different from one another; Italy occupies an intermediate position, though slightly closer to the United States; and England is equidistant from Italy and the Netherlands, and somewhat farther from the United States.

Table III gives the results obtained by a technique of analysis which is more sensitive to individual variation within a country. On each Blacky dimension it was possible to compute a coefficient of concordance (W) for the sets of ranks of all individuals within a given country, and to convert this

W to an average rank-order correlation (ρ). The latter provides a measure of intra-country agreement. It was also possible to derive a comparable measure of inter-country agreement, against which to evaluate the average rhos of separate countries.⁵ From Table III it is apparent that the average rhos within countries are consistently low—the highest being .243 and the vast majority under .10. The fact that these within-country coefficients of agreement are not appreciably greater than the corresponding between-country ones points to the over-riding part played by individual differences. In other words, there is virtually as much variability of preferences among the members of a given group as there is between groups.

DISCUSSION

Discussion of the foregoing results must be prefaced by stressing the limited and exploratory scope of the research. The sizes of the samples in the various countries are not large and their representativeness is certainly open to question. The responses of college students undoubtedly are not typical of the population as a whole, and there is no guarantee that the subjects tested are representative of college students throughout a country or even in a particular university. In addition the personality variable un-

⁵ Technique devised by Dr. William L. Hays, Department of Psychology, University of Michigan (unpublished).

der scrutiny—defense preference—defines but one aspect of character structure. Further restrictions are imposed by the fact that the DPI samples preferences for only five defense mechanisms, and these in relative terms. It must be kept in mind, then, that the results of this investigation pertain to fairly small groups of male college students, tested for their relative preferences among five defenses by an instrument whose validity cannot as yet be considered fully established.

Within these limitations, it appears that certain modal differences do exist between countries with respect to preferences for avoidance as a method of handling various psychosexual conflicts. This preference is most marked in the case of the Netherlands, with England also tending to exceed the United States and Italy. The only two exceptions to the overall Dutch pattern occur on Picture V (Masturbation Guilt), which contains a denial rather than a repression item ("Though licking himself, Blacky isn't affected by sexual sensations and will soon move on to other parts of his body"); and on VII (Overt Aggression) where the avoidance item is implausible and ranked low by all groups ("Blacky is eagerly calling the family's attention to his new toy dog, which he is very proud of"). The attribution of psychological significance to these differential preferences for the mechanism of repression is encouraged by the fact that the avoidance items, as mentioned in the summary of previous research using the DPI, have received the strongest validation.

Apart from these overall differences between countries in mean ranks assigned to avoidance items, the major finding of the research concerns the extreme variability of individual preferences within the seemingly homogeneous samples in each country. The low agreement within a group of students from the same university leads one to question the validity of descriptions of national character.

It is interesting to note the similarity of these results to a study recently reported by Kaplan (6), in which the Rorschach responses of four cultures—Navaho, Zuni, Spanish-Americans, and Mormons—were analyzed by a number of different methods. In discussing the outcomes, Kaplan writes:

"What are the overall implications of our results for our knowledge of the variability of personality from culture to culture? This is not a simple question to answer since, as we have seen, different analyses suggest different answers. Certain of the results, such as the high degree of variability in all the within-culture data, and the relative paucity of important differences among the cultures in places where they might reasonably be expected, strongly suggest that there is less variability among cultures than we would have suspected. On the other hand, the successful sorting of the Rorschachs . . . , the ability of the discriminant function technique to distinguish between most of the pairs of cultures, and the presence of statistically significant differences between some of the cultures on certain Rorschach variables, are equally strong evidence favoring the idea that something like modal personality characteristics do indeed exist." (p. 31)

In conclusion, then, the present investigation supports the point of view that some national differences in character structure can be detected if the analyses of data focus on measures of central tendency, but individual differences become paramount when attention is shifted to within-group variability.

SUMMARY

A study of defense preferences in four countries was conducted to explore national differences in character structure. Responses to the Defense Preference Inquiry (Form M53) for the Blacky Pictures, administered to male college students in Italy, England, the Netherlands, and the United States, revealed the following:

1. Analysis of mean ranks assigned to various defenses showed national differences only with respect to preferences for avoidance (repression-denial family), with the Netherlands

group having the most preferences, England next, with Italy and the United States the least. No significant differences were noted for reaction formation, projection, regression, and intellectualization.

2. Comparison of intra-country agreement with inter-country agreement showed the former to be consistently low and not appreciably greater than the latter.

These results were interpreted to suggest the prevalence in all four nations of widespread individual differences in character structure, with some discernible differences between countries in regard to avoidance preferences.

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Limitations of Projective Techniques: Apparent and Real

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In examining the limitations of projective tests, particularly as these pertain to therapeutic planning, our task is considerably facilitated if we distinguish between real limitations and apparent or avoidable ones. By making this distinction, we can move in the direction of rectifying some of the avoidable obstacles, which then may leave us more time and energy to tackle the difficulties inherent in our methods, or as I would prefer to suggest, in the nature of the problems we are studying.

Strangely, when we examine some of the *real* difficulties the projective tester is facing, it soon becomes evident that he is sharing many of them with the psychological and psychiatric therapist. In our enthusiasm we must have hoped that somehow our new techniques would cut across some of the difficulties the therapists were facing, and we clung to this fond, if not magical hope by spending our efforts devising new tests intended to do the trick better, rather than examining our basic and shared premises. Undoubtedly this kind of scrutiny is apt to have the double effect of making us less apologetic about our shortcomings and more impressed about the magnitude of the problems with which we try to deal.

Let us begin with a very simple and blatant example of a real and shared problem, namely the need of a skilled interpreter in evaluating either clinical or test data. Tests, like clinical observation, merely record behavior. Determining the meaning of this behavior already involves inference, and thus the insight and skill of an interpreter. Inferences from either type of data can be correct or incorrect. There is nothing built into the test which makes such inferences automatic or fool-proof. Test evalua-

tions thus do not entirely cut across the problem of subjectivity and are not the independent and objective measurements some had hoped.

Another potential source of error lies in the assumption which both fields share, that generalizations may be made from the behavior samples observed to behavior in other situations. In the case of projective tests we assume that the affect management and internal organizing principles as revealed on the tests will also hold in some form in other situations. Similarly, the psychotherapist will use the patient's way of relating and his transference reactions as his tools of observation through which he formulates his hunches about the patient's other relationships, past and present. While both the tests and the scrutiny of the transference usually prove to be excellent observational tools, particularly when used for a microscopic analysis of behavioral segments, our conclusions may at times not leave enough margin for error. Barring wrong inferences from our observations, we are still confronted with the possibility that certain variables are operating in our sessions which are not at work elsewhere, and vice versa.

Let us examine another shared and very real problem, the nature of which is less obvious than the previous ones. We hear nowadays a good deal of criticism that we focus too much on the pathological and not enough on the adaptive functions. The same criticism is launched at the therapist. We all realize the importance of these adaptive functions. The reason why we so often pay only lip service to this importance is that in many instances we simply cannot detect and spell out the workings of these adaptive functions. Anna Freud (1) tipped

us off about this problem in her book on "The Ego and the Mechanisms of Defense," demonstrating that successful defense is carried out silently and invisibly, with the ego knowing nothing of the rejected impulse nor of its defensive maneuvers. It is much easier to witness and describe the failure of an ego activity than to capture its successful synthetic operations. Let us consider, for example, the ingredients of a contaminatory or fabulatory response; among other things we may witness in these responses a synthetic effort of the ego that failed, an effort which we can describe and sometimes break down into its component parts. This is not so with a well organized response or an adaptive act, for the process of successful synthesis goes on silently. If we keep this in mind it is perhaps not so difficult to understand why both projective tester and therapist have such a difficult time gauging the strength and nature of an individual's sublimatory and adaptive capacities.

Related to this difficulty is another problem over which we tend to glide lightly because we have not solved it. In our discussions we speak of more or less sick patients, of marked or moderate hostility, etc. Our qualitative differentiations are not as yet too sharp either. For example, we speak of denial in hysteria and in schizophrenia; very likely there are both qualitative and quantitative differences in this denial. Years ago Rapaport (4) stressed our need to differentiate between the various forms of projection; for what we now call projection ranges all the way from maneuvers of externalization to out and out paranoid projection. While there is an increasing awareness of the importance of these qualitative and quantitative differences, a good deal of research is required to provide both disciplines with a stabler frame of reference.

Another real problem, equally shared by the projective tester and the therapist is that all manifest needs

are of a derivative nature and that all overt behavior is multiply determined. In addition, by sharing psychiatry's most basic assumption, namely that of psychic determinism, we share both the advantage of the theoretical lawfulness this assumption offers us, and its limitations with regard to the intervening variables which condition behavior, such as outer circumstances and chance events. Multiple determinism, both internal and external, seriously affects prediction of future behavior and postdiction of genetic events. This is a sore subject with many workers in the field, who without reasoning through the theoretical problems involved, cling to the idea that somehow projective tests should cut across this problem. In fact, many feel that if projective tests cannot predict future behavior, they fail the acid test of validity. The author tackled this problem many years ago (3), suggesting that projective tests merely elicit behavior and that any conclusions derived from the test results is made by way of inference. Psychological inference is not something which is built into the tests, but enters the realm of general personality theory. Inferences from test data, then, are not only bound by the extent of the interpreter's familiarity with psychodynamic principles, but also by the limits of our present-day knowledge of such principles. In making predictions we are thus faced with the same problems as the therapist. Like him we shall need to estimate the strength, nature and vicissitudes of a patient's drives or needs and how these are mediated or altered by ego-defensive operations, by reality requirements and past experiences. This estimate undoubtedly will be safer if we consider along with projective test data, evidence derived from cognitive tests and from a patient's life history.

Somehow, this position has been considered overly pessimistic, as if spelling out some of the inherent difficulties implied that specific predic-

tions should not be tried or could not be made. Quite the contrary, we can further our knowledge only if we constantly attempt to make predictions. These we should treat as tentative working hypotheses, subject to revision.

The writer is convinced that, while projective test data alone *need* not give us accurate predictive clues, they *can* do so to an astoundingly accurate degree. By seeing more in the way of latent potentialities, we are enabled to predict more via clinical inference. This is not so unless we have a full and adequate test record, which in turn brings us to still another problem, the problem of insufficient evidence.

Sparse observational data, test or clinical, are apt to give us a very incomplete notion of an individual's psychic functioning. While the behavioral fragment itself cannot help being a valid sample of behavior of the person giving it, the context into which we may interpret it may render it invalid. Insufficient evidence may make our interpretation too general, inexact or incorrect. Also, sparsity of material may make a decision of what is peripheral and what is centrally important extremely difficult. The best we can say of meager records is that they allow us to arrive at approximations. These have the same virtues and limitations as what Glover (2) in the therapeutic field calls the effect of inexact interpretations, namely, that they are partially true and useful in that they approximate parts of the true state of affairs, but they are ultimately misleading because they are not specific enough.

Conversely, and paradoxically, a great deal of test data, particularly when inconsistent, may create other kinds of difficulties in our evaluations. A number of problems are involved here: It is always easier to state generalities about a case and to make gross predictions than to formulate specific ones. For gross predictions overabundant data actually get in our

way because too many conditional questions are raised. For very specific statements or predictions we need a good deal of data. Yet our chances of error are infinitely increased through the very bulk of the material. One reason for this is that such bulk taxes the synthetic processes of the interpreter to a much greater degree. Another reason is that with each inference he makes about the vicissitudes and elaborations of an original conflict or pathogenic defense, he is apt to take the wrong turn in the multiple choices at hand. Interestingly enough, to take the right turn and to make the right choices, the questions raised by too much data can only be answered by more data. Thus the problems arising from too much bulk with its inconsistent, incomplete and enigmatic hints, boil down ultimately to gaps in information and insufficiency of material.

Perhaps we should next concentrate on those limitations which are not inherent in the nature of our task, but are created by obstacles of interdisciplinary communication. We ourselves can contribute a great deal to diminish these problems. For example, our test reports will be most helpful if they are neither overly technical, overly general nor overly abstract. We should make a concerted effort to translate our test findings into ordinary clinical terms, understandable to all. We shall thus be forced to give ourselves an account of what our test results mean in ordinary psychodynamic and psychopathological terms which will clarify our own thinking. For the other members of the clinical team this effort will diminish the distrust engendered by lack of understanding, as well as the unrealistic overevaluation of the "objectivity" of test results which they may associate with the magic of statistics and specialized jargon.

While test results, to be optimally meaningful, should always be confronted with genetic and clinical ma-

terial, a clear statement about the origin of each inference will do a great deal to clear the interdisciplinary atmosphere. It furthermore helps if all members of the team have an awareness, both of the scope and limitations of projective tests. This can be accomplished in a few sessions geared to exploring the theory underlying projective testing and the problems shared by both disciplines. This kind of awareness on everybody's part pays dividends in the form of realistic referrals and expectations. This will also further the spirit that the formulations and predictions arrived at are not finite, but are tentative working hypotheses subject to subsequent verification and revision. This kind of collaboration will do much to replace righteous convictions about a case with a shared curiosity.

More difficult to remedy are basic differences in theoretical frame of reference which frequently obstruct smooth communication between staff members. To be maximally useful in therapeutic planning, it helps if tester and therapist share the same personality theory. Even when this is shared, difficulties often arise through undisciplined discussion. It is not uncommon that in our discussions we indulge in an unholy mixture of dynamic, economic, structural and genetic considerations. This can have one of two effects: That by switching from one plane to another in an effort to justify our formulations we may arrive at thoroughly confusing and theoretically inconsistent conclusions, reflecting essentially an attitude of "anything goes." Paradoxically, the opposite may also occur, namely that what appears to be a disagreement is more apparent than real. It happens not too infrequently that two people actually talk about the same phenomenon, one in economic and the other in structural terms. It is, of course, difficult to maintain clarity of this kind. What might help is a research project investigating the interrelationship of psychic phenomena as they

might appear in id, ego or superego terms, or in structural, dynamic or economic terms.

There are obstacles of still another nature, obstacles which tend to reduce diagnostic work-ups to a routine of "going through the motions" totally unrelated to therapeutic planning. These fall under the heading of identification problems on the part of the tester and therapeutic biases on the part of the therapist. To consider first the tester: With our increasing interest in undertaking therapeutic work, a peculiar devaluation of diagnostic skills has become prevalent. Indeed, in some parts of the country it is difficult to find psychological internes who are interested in testing. Trainees often consider diagnostics a concession which they must make to become therapists. Our curricula implicitly may strengthen this attitude by the very nature of the clinical sequence. First the students are exposed to testing and then they advance to "bigger and better things," namely therapy. Furthermore, the apparent lack of statistical validity of the projective tests serves as an excellent rationalization to maintain this lack of investment. This devaluation must make itself felt in our communications with our colleagues. Because of it, psychological reports frequently contain mostly interview material rather than test findings; the latter may restrict themselves to a few generalities, geared to what we think is wanted. We thus sell ourselves short on an excellent educational opportunity to acquaint our colleagues with the additional dimension of the structure of their patient's ideational life. In the last analysis, if we ourselves are not interested in this kind of contribution, how can we possibly expect others to be?

Invariable adherence to one type of therapeutic regime is another deterrent to an optimal exploitation of the contribution which projective tests can make. Specifically, if a therapist is convinced that every patient will

be helped only by an interpersonal relationship, or by the reflection of his attitudes, or by insight into his unconscious processes, he will not need much therapeutic planning. Such planning entails at least an attempt at an individual and adaptable formulation as to what in each case it is wise to touch and what it is best to leave alone, both in the way of pathology and strengths. In this kind of planning, projective test results can be extremely helpful. In therapies in which such formulations never modify the method of treatment, diagnostics tend to become an empty gesture.

Now that we have considered some of our self-imposed limitations, perhaps we can return to the problems inherent in our methods. Assuming that we are halfway successful in minimizing the avoidable limitations—and this is no small task—what specifically can we do to bring about a rapprochement between projective testing and therapy and ultimately a reduction in our fundamental problems? It seems likely that a great deal can be accomplished when case conferences aim not only at the customary objectives, but assume in addition a definite teaching and research function. This certainly should be so in training installations where extra time can be set aside to pursue some of these objectives. In presenting projective material fully, postulating, as Schafer (5) has recently suggested, the hierarchic position of each finding in the total personality picture, we can add substantially to our total impression of a case. By analyzing our test data in terms of the sequential emergence of drive derivatives, defense and adaptation, we witness dynamic and economic shifts which at the same time lay bare structural features of the case. By examining verbatim samples of ongoing thought processes we have an opportunity to study in slow motion, as it were, structural features of language, thought organization and thought disorder. This represents a

powerful teaching device, for curiosity and sensitivity to the structure of thought are real diagnostic assets even for therapists. They are an important, frequently overlooked adjunct in evaluating interview material. Ideational samples from test data are an excellent training ground for this kind of scrutiny, better than interviews, for they always pull in the direction of favoring content over structure.

Of equal, if not greater interest are presentations of test results which are at variance with the interview material. Barring wrong inferences from the test data, we must assume that we have obtained a valid behavior sample. In cases where our conclusions do not jibe, it would be a mistake to discard test findings as inaccurate. It would be wiser to consider them as a latent potential, or an added dimension, which may come to the fore under altered intra-psychic or environmental conditions. In any event, whatever the discrepancies might be, a great deal can be learned by all in a common effort to explain them.

In the process of therapeutic planning, we try to assess not only a patient's pathology and strengths, but also his probable behavioral adaptations to current situations and to future therapeutic interventions. This attempt intrinsically contains prediction. Instead of doing this haphazardly, we should use this effort as a research tool. We should systematically chart down our predictions and embark on a longitudinal study of our cases. By bringing them up for periodic review we might observe that certain clusters of interacting variables had predictive value. We may thus come closer to reliable predictive criteria which would then help us in prediction about other individuals in whom similar clusters operate. We thus may inch closer to solving some of our fundamental problems. What we should not overlook either is that in addition, such an ef-

fort represents a validation study, which may perhaps be more true to the nature of our problems than some of our other attempts.

Perhaps, viewed from this vantage point, we shall not need to depreciate our projective work quite so much. We shall not need to consider it a second-class contribution in the realm of professional skills. No doubt we shall look upon our work with renewed interest, if, as has been suggested above, we apply our methods to some of the most basic theoretical problems all of us are facing today.

Perhaps, also, by differentiating real from avoidable sources of invalidity we might advance in solving some of the thorny problems which plague the field of projective techniques proper. It is not enough, as has largely been done in the literature, to point to low correlations and to list the shortcomings of projective techniques. To make progress we have to ask and spell out more, namely, *what* are they invalid for, and *why*. To answer particularly the last question, reasoning through the theoretical problems involved will be of much greater help to us than if we industriously repeat

old correlations or run new ones. By theoretically spelling out what is involved we may spot (1) where and in what way our techniques might be improved; (2) what statistical treatment might be most suited to these particular techniques; (3) which issues might better be tackled first through the establishment of valid clinical criteria and secondarily through projective techniques and (4) what may be the areas in which it is unrealistic to expect any definite answers considering the multiplicity of factors and the state of our present-day knowledge of their interaction.

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A Study of Patients' Identifications from Rorschach Records and Therapists' Judgments

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In the psychoanalytic literature the term "identification" is used with a wide variety of meanings and in many complicated contexts. It is sometimes discussed in terms of the mechanism (introjection), often in reference to the object, sometimes with chief attention to the instinctual aim, or to the part of the personality involved (ego, superego).

In the history of the individual, the development of masculinity or femininity is closely related to the identification with the parent. As object cathexes of the Oedipus complex are replaced by identifications and the superego is being established, a complicating element is introduced by the bisexuality of the organism. According to Freud's formulation, "The relative intensity of the two identifications in any individual will reflect the preponderance in him of one or other of the two sexual dispositions" (2, p. 44); or "It would appear, therefore, that in both sexes the relative strength of the masculine and feminine sexual dispositions is what determines whether the outcome of the Oedipus situation shall be an identification with the father or with the mother" (2, p. 42).

Because of this correspondence between the predominantly masculine or feminine role of the individual and the parental identification, disregarding now the intricacies within the concept of identification, it has been widely accepted in the interpretation of the Rorschach technique that the predominant sexual identification of the individual is revealed in his perception of the sex of human figures seen in the blots (3, p. 380; 4, pp. 135-136). Some subjects who are having difficulty with their sexual identi-

fication avoid the problem at all costs in responding to the Rorschach by referring to human figures as "persons". Klopfer adds: "Some subjects seem to betray doubt about sexual identification, being unable to decide whether the figures are men or women (3, p. 322; p. 380). Confusion in sexual identification is thus interpreted from such responses. It seems a reasonable assumption that the proportion of human figures seen in the Rorschach which are male or female will yield information regarding the sexual identification of the subject. This same assumption was made and the same kind of measure used in a recent study of identification reported by Zeichner (5).

In the study reported here the following hypothesis was investigated: The identification of patients (with father or with mother figures) can be predicted from the sex of the human figures perceived in Rorschach blots. In order to explore this hypothesis, Rorschach protocols of 101 male patients at a mental hygiene clinic were examined and the proportions of male and of female figures seen on the blots were determined. Therapists' judgments concerning the major identifications of these patients were obtained and used as the criterion. In addition, estimates were obtained from the Rorschach responses and from the therapists as to whether the identification was viewed by the patient with acceptance or with rejection.

PROCEDURE

From the current case load of the V.A. Mental Hygiene Clinic in Los Angeles, a list was made of all pa-

tients to whom a Rorschach had been administered. The name of the therapist in each case was noted. A data sheet entitled "Patient Identification Form" was prepared. On this was recorded the sex of the human figures seen in each Rorschach card and whether the male or female figure was viewed with acceptance or with rejection. In determining the sex of the human figure where it was not explicitly mentioned, such as clowns, acrobats, witches, etc., popular conventions or stereotypes were adhered to. Categories were provided also for those responses in which the sex was not specified and could not be inferred (unspecified) and for those in which the same figure was called both male and female (mixed). In recording the sex of the human figure, different symbols were used to indicate whether a whole figure or only a part was seen. The accepting or rejecting attitude on the Rorschach was inferred from descriptive comments. For example, "threatening", "fighting", "sloppy", etc., were considered as rejecting. Where rejection could not be inferred, acceptance was assumed. The two investigators together examined all records and made the judgments.

For each patient the total number of responses in the male, female, and unspecified or mixed categories was determined, the proportions of the total which were male and female were computed, and the larger proportion was considered to represent his sexual identification on the Rorschach. Similarly the number of accepting and rejecting responses was determined, the proportion of each was obtained, and the larger measure was regarded as the patient's predominant attitude toward his identification.

In order to obtain from therapists at the Clinic their judgments concerning the identification of the patients whose Rorschach protocols were examined, the following memorandum was sent to each:

TO:

FROM:

SUBJ: Patient Identifications

Name of Patient.....

We are undertaking a little study of patient identifications in which we need your help. This will involve no more than five minutes of your time for each patient about whom inquiry is made.

In answering the questions below, please have in mind your impressions based only on the therapeutic material as it has come out in the interviews *over the whole course of therapy*. Try not to be influenced by any other data, such as Regional Office reports, claims file, psychological test results, hospital summaries, etc.

1. In the course of therapy with this patient, have you had clinical evidence of his identification with parental figures?
(Check)YesNo
2. If yes, is his major identification with his
.....Father (or substitute)
.....Mother (or substitute)
3. In the course of therapy have you had clinical evidence that his attitude toward this identification is one of
.....AcceptanceRejection
4. Is there evidence of some degree of identification with the parent other than the one indicated in 2?
.....YesNo
5. In the course of therapy have you had clinical evidence that his attitude toward this identification (Item 4) is one of
.....AcceptanceRejection
6. How long has this patient been in therapy
With you
In the Clinic.....
7. Comments:

On the "Patient Identification Form", already referred to, the therapists' judgments were recorded for each patient. This procedure made available for comparison with Rorschach data information on the patient's major and secondary identifications, if present, and attitudes of acceptance or rejection.

RESULTS

The following comparisons were made from the recorded data:

1. Between the predominant sexual identification on the Rorschach and the therapists' judgments of patients'

major identification. For this comparison all Rorschach cards were used and both wholes and parts of human figures seen were included. When chi square was computed, a value of 7.083 was obtained with a corresponding p of .14. This indicates no significant relationship between the two. Results of this comparison, therefore, did not support the hypothesis that the identification of patients (with father or with mother figures) as judged by therapists can be predicted from the sex of the human figures perceived in Rorschach blots.

2. Between the predominant sexual identification on the Rorschach as indicated by whole figures only (on all cards) and the therapists' judgments of major identification. Chi square was computed and again was not significant ($p = .98$).

3. Between the predominant sexual identification on the Rorschach as indicated by human figures (wholes and parts) on Card III only and therapists' judgments of major identification. When chi-square was computed a value of 8.074 was obtained with a corresponding p of .08. Here again the original hypothesis was not supported, though in this comparison a trend in the expected direction was apparent.

The question was then asked: Is a patient's acceptant attitude toward the sex of the human figures perceived in Rorschach blots associated with an acceptant attitude toward his major identification as noted by the therapist? Is rejection on the two associated? Comparing only the accepting and rejecting attitudes, regardless of the sex of the human figures perceived or the character of the identification indicated by therapists, chi square was computed and a value of 5.056 was obtained with a corresponding p of .28. There was found therefore no significant relationship between the attitudes indicated in the two situations.

In comparing the data from the two sources on accepting and reject-

ing attitudes toward the identification an interesting trend was noticed. Judgments based on the Rorschach gave a significantly more "accepting" picture of patients' attitudes toward their identifications than did the therapists. The therapists, on the other hand, gave judgments of "rejecting" significantly more frequently than were obtained from the Rorschach. It was not only toward feminine identifications of their patients that the therapists made these judgments of "rejecting". In fact, toward feminine identifications 66 per cent of the attitudes were considered "rejecting"; toward male identifications 84 per cent. The difference here, however, was not statistically significant.

DISCUSSION

Results of this inquiry have not supported the original hypothesis, although when Card III alone was used, a slight trend in the expected direction was evident.

Various factors were considered in the attempt to interpret the negative findings:

1. The assumption concerning the Rorschach might be incorrect, namely, that the sexual identification of the individual is revealed by the sex of the human figures seen most frequently in the blots. Nothing in this investigation could shed any light upon this point. One could speculate that possibly the frequency of human figures seen of one sex or the other may represent preoccupation or conflict rather than identification. Such preoccupation might be especially marked in patients in psychotherapy who constituted the sample for this study.

2. Card pull might be of such magnitude as to distort the judgments based on the Rorschach. To examine this possibility, since this was a male population, Card VII, which has a high pull toward feminine figures, was eliminated from the Rorschach judgments. Chi square was computed

and no significant change was found ($p = .18$).

3. The therapists' judgments might be in error. On this point also we could find no real evidence. The possibility that the sex of the therapist who made the judgments might be a consistent source of error was explored, but it was found that the judgments of both male and female therapists had similar distributions.

4. There might be a semantic problem involved in the definition of "identification" by different therapists. To explore this point we asked all therapists to give the definition of "identification" which they had used in making their judgments. While these definitions showed some variation, it was not felt that enough conflict or contradiction appeared to suggest that this was an important source of error.

5. Regardless of semantic difficulties, however, the very concept of identification may be too complex to explore by any such simple methods. As was indicated in the first paragraphs, the intricacies within the concept of identification are very great, while in the questionnaire sent to the therapists only a global judgment was requested. No attempt was made to specify the area of the psyche involved, the mechanism, the instinctual aim, the object. This looseness of specification may produce too crude a judgment to embody the concept adequately. Indeed, many of the therapists described great difficulty in making their judgments. An effort to

limit the area of identification to certain specified and easily recognized characteristics might have produced different results.

SUMMARY

This study was designed to investigate the hypothesis that the identification of patients (with father or with mother figures) can be predicted from the sex of the human figures perceived in Rorschach blots. The Rorschach protocols of 101 male patients at a mental hygiene clinic were reviewed and the pertinent data recorded. The judgments of the patients' identifications by their therapists were used as the criterion data.

The Rorschach data were analyzed according to the frequency of the sex of whole and part figures in the entire record and in Card III alone in relation to therapists' judgments. Acceptance and rejection of the identification in the Rorschach and in therapy were also compared. No significant relationships were obtained in any of the comparisons.

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Color-Response and Perceptual Passivity

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Notwithstanding the psychoanalytic influences on projective techniques in general, certainly including the Rorschach, relatively little has been done since the work of Rapaport, Schafer, and Gill (16) toward a psychoanalytic understanding of those formal aspects of the Rorschach protocol whose importance we acknowledge when we call them the "determinants." There has been some recent work which promises to help our understanding of the M response (12), much influenced by Heinz Werner's concepts of perceptual development and by certain concepts of psychoanalytic ego psychology which seem, in fact, compatible with Werner's developmental ideas.¹ Our attempt here to take up the problem of color-response will also rely heavily on concepts of psychoanalytic ego psychology and, in addition, certain facts of general perceptual development.

It is not an easy matter to find a starting point for a discussion of this problem. Perhaps if one were called upon to make a single statement about color-response in the Rorschach toward which clinical experience points and around which all clinical workers agree, it might be such a one as that the handling of color on the Rorschach reflects the subject's ways of dealing with affect. The problem, then, would be to understand this relationship between color and affect. But a quick survey of the literature and, for that matter, of ordinary clinical experience, does not seem to bear out that the problem can be defined as sharply as this. For one thing, the

meaning of "affect" in this formula is by no means immediately clear, and it is obvious that it has been used in different senses by different writers. Some have used the terms "affect" and "impulse" interchangeably, implying that these are identical, while others have distinguished between these concepts. Some have also considered color response to reflect an inclination to action, and at times, concepts relating to affect, impulse, and action are all used interchangeably. But this unclarity does not seem to be accidental; it seems to reflect, rather, certain problems inherent in the clinical facts themselves. Within an ordinary range of clinical experience, one encounters at least three different types of subjects whose Rorschachs may be characterized by an accumulation of relatively large amounts of color dominated responses. These are: 1) Subjects, mostly hysterics, in whose Rorschachs an abundance of color is accompanied clinically by an abundance of affect, *but not particularly by impulsive action*; 2) subjects, including many who may be described as narcissistic or psychopathic character disorders, for whom the Rorschach color-emphasis seems clinically paralleled by impulsive action, *with only little or shallow affect accompanying the action*; and 3) subjects, severely regressed chronic schizophrenics, in whom, clinically, neither affect nor action is outstanding, but who present a picture, rather of conspicuously disorganized thought, shallow, inappropriate, or "blunted" affect, and a degree of immobilization of action. These last are the patients who often give the purest color of all.

I have not introduced this picture of the various clinical conditions which may accompany a high color responsiveness on the Rorschach in the hope of delineating the problem

¹ There has, also, recently been a very brief attempt by Sherman (21) to understand all the determinants as forming a "continuum," with color "related to indirect manifestations of id," form to "ego controls," and movement to superego functioning.

clearly, although I do believe that these three types of subjects may reveal certain important aspects of the problem, and I shall return briefly to a clinical example of each later on. More important at this point, however, is the necessity for broadening our view of the problem beyond the formula: color equals affect. This consideration can perhaps best be held in abeyance for a time, while we consider certain important contributions that have been made to the understanding of color response.

I should like to discuss briefly three contributions: Schachtel's, Rikers-Ovsiankina's, and Rapaport's. These three approaches have a common feature; they attempt to understand the meaning of color response in terms of perceptual and/or thought processes involved. I am aware that other approaches have been proposed which seek, in effect, to skip this step and to establish a connection between color and affect on the basis of presumed cultural learning experience, but, as Rapaport (16) for one has pointed out, such theories do not constitute real explanations but simply postpone the problem of how such a connection originally comes to be a cultural fact, if it is.

Schachtel (19) begins with the question: Why does color responsiveness seem to reflect affect? He advances, in an anecdotal but convincing way, the following consideration: The perception of color, in some contrast to the perception of form, involves primarily a passive process. The sense in which he uses the word "passive" will be conveyed if one follows his example and imagines walking into a room in which there is a colored area on the wall—the color "seizes" one. The perception of color is an immediate and direct affair and a process which requires little activity on the part of the perceiver. The subjective experience is, in effect, one of being struck or taken by the stimulus. Schachtel then goes on to point out that this is exactly the way in which affect comes

upon us. Emotional response is not a result of willful activity; rather, we are taken, or one might say are seized by it, sometimes even in spite of ourselves. Schachtel suggests that it is this essential similarity which makes color on the Rorschach that aspect of the stimulus best suited to reflect affective responsiveness.

Schachtel reflects a general clinical impression in these observations. But one cannot avoid considering the fact that affect is by no means the only mental phenomenon which comes upon us with any willful effort on our parts, or, perhaps, which comes upon us when the ego, in a momentary and quite limited way or in a pathological way, has relaxed some of its controls. To mention some other phenomena which appear in exactly this way in different types of people: aggressive or sexual impulses, seizures of various sorts, inspirations (11), including, for example, religious inspirations or artistic or scientific inspirations, and, finally, the minor "insights" or bits of creative thinking which form a part of the daily life of everyone. Schachtel does not consider the following question, but it seems to follow from his position: Does color-responsiveness on the Rorschach, as a relatively more passive perceptual process and one which is, therefore, well suited to reflect aspects and degrees of ego passivity on the part of the subject, reflect also all of these and more such phenomena?

There is another question that presents itself in connection with Schachtel's position. It does in fact seem possible to understand color-response in terms of a concept of passivity much like the one he describes. But in order to do so it seems necessary to make a certain differentiation, namely, between passivity as an objectively definable state, on the one hand, and the subjective experience or *feeling* of passivity on the other. We shall return to this problem later, in the clinical example of a narcissistic character disorder. Suffice it to say at present

that the objective condition and the subjective experience may often coincide, but do not necessarily.

The second approach we shall consider here, that of Rickers-Ovsiankina (18), bears a close relationship to Schachtel's ideas which will become clear immediately. Taking up the question of the connection between color response and affect, she also examines the processes involved in color perception. She discusses, first, certain experimental data, some of which will be discussed here also, which tend to indicate that the processes involved in color perception are more *simple* and more *immediate* than those involved in form perception. She states:

"We know from the psychology of perception that the perceiving of a separate form is the product of a gestalt process, consuming energy. Without the activation of these organizational forces, no form perception is possible. With respect to perception of color, however, the situation is different: apart from the fact that color differences within the visual field will demarcate different areas, and thus bring into play the factor of form with its organizational properties, the color perception as such is not correlated to complex processes of articulation and organization. Color experience, when it occurs, is thus a much more immediate and direct sense datum than the experience of the form." (p. 48)

From this point, however, Rickers-Ovsiankina's argument differs from Schachtel's. Making reference to Werner's work and to his concept of "physiognomic" perception, she suggests that the nature of color perception, being a more immediate, less articulated, and more primitive process, would in itself make color much more liable to subjective, affectively toned, or physiognomic interpretation; in contrast to the more detached attitude which ordinarily prevails in, or is even dictated by, the process of form perception. This argument seems cogent, yet it seems to have serious limitations. It would seem to explain the affective tone and quality of the content of many color-dominated responses *when they do occur*, but in

itself this hypothesis seems not to explain the occurrence of various degrees and kinds of color emphasis in the Rorschachs of individuals with various sorts of character structure.

Rapaport, Schafer, and Gill (16) take as their starting point that a relationship between color and affect may be accepted as an empirical fact, and devote their attention, then, not to this relationship per se, but rather to the implications of the various ways of handling color. At the same time, it should be noted that these authors consider that the manner of handling color in the Rorschach refers not only to the subject's manner of handling affect, but to his "characteristic expression and control of affects, impulses, and actions." (My emphasis.)

Rapaport's discussion of color-responses is based upon the psychoanalytic theory of affect, which he has considered more recently in greater detail (14). We shall not attempt to detail his discussion here. Its nucleus is the concept of delay of drive-discharge. In the course of development, the delay of drive-discharge, originally a necessity imposed simply by virtue of the lack of ever-present means for immediate discharge, becomes an increasingly organized and stabilized *capacity*. Detours and controls are established, and drive-derivatives emerge which are in turn subject to further delay and refinement. "Methods of probing for, ascertaining, selecting, and grasping the satisfying objectives with least risk are developed." In the course of the hierarchical organization that is built, "relatively autonomous derivatives of the original drive are built up." In part these consist of affects; in part, thought.

Rapaport considers the capacity to articulate a form-response to presuppose a capacity for such delay. Making the empirical assumption mentioned, concerning the relationship between color and affect, he considers that the FC response requires, among the various color responses, the

greatest capacity for delay, sufficient "to allow for the emergence in the course of the associative process of that content possibility which could successfully integrate (form and color)." Such an integration of the "impact" of color with an articulated form represents a capacity for affective response appropriately integrated with or guided by a "factual assessment of reality." The CF response, in contrast, comes about when there is insufficient, or at least not smoothly functioning, capacity for delay, with a consequent inadequate integration of the "perceptual impact" of the color with form considerations. It suggests, therefore, the potential for affective outbursts. In the case of the pure C response and particularly its most primitive variants (e.g. color naming), the assumption is of a kind of "short circuiting" reflecting a state of affairs in which sufficient delay does not take place to permit any integration of the color with articulated form. This psychological condition, in terms of the model described, would tend to reduce affective responsiveness, as we ordinarily think of it, as in some cases of chronic schizophrenia whose affective state may be characterized as "blunted" or "flattened."

This approach to the variants of color response, more than the previous two approaches, seems to permit elaboration to cover the considerable variety of color responses on the Rorschach. Rapaport has, as mentioned, explicitly avoided the question of the apparent connection of color perception with affect, in contrast to Schachtel and Rickers-Ovsiankina who take this question as their starting point. Yet, Rapaport's discussion, like the two previous ones, makes certain clear, if sometimes implicit, assumptions regarding color perception, and these assumptions seem in fact very close to those made by Schachtel and Rickers-Ovsiankina. Whether the process of color perception on the Rorschach, in so far as it is separated from the perception of form, is called

"passive" as by Schachtel, "immediate" as Rickers-Ovsiankina describes it, or is said to involve a "short circuiting" as Rapaport suggests, *the common assumption* seems to be that the process of color perception is one which requires less delay, in a manner of speaking less effort, or less ego activity than the process of form perception. Such an assumption seems crucial.

It seems now to the point to put Rorschach considerations aside for a while and to see what help more general aspects of perceptual development may provide in evaluating and perhaps elaborating this assumption. For this purpose, we shall have to consider briefly certain facts of early perceptual development which are considerably more broad in their scope than the problem of color perception itself.

Perhaps it should be said at the outset that to speak of early infantile perception as though it were as discrete and independently established a function as perception later becomes does not seem justified. The data of developmental psychology do not need much extrapolation to lend support to the psychoanalytic concept of an original, relatively undifferentiated state in which, it can only be assumed at present, there is a diffuse sensory experience of visual, tactile, thermal stimulation, and the like, intimately bound up with inner states of need and their satisfaction or frustration. A certain equipment is given in the infant, including the visual apparatus, but its functioning is as yet far from being as independent as it will later be of other functions, e.g. motility, or of the state of need, or drive state, that exists. To say, as Werner (25) does, that in the young child "the motor-emotional and sensory factors are blended into one another" is to say a good deal more than simply that sensory content is strongly flavored by the existing emotional state, as may be the case also in normal adult perception. The early sensory impression is imbedded in and to a significant ex-

tent defined by the need state and motor actions with which that impression is associated, e.g. the critical quality of the object may be that it is suckable or not suckable. Early perception has been described as global, diffuse and poorly articulated, and concrete; this is to say that it tends to consist of the *over-all sensory impression* which is manifestly associated with the need state and motor actions. What may be seen, from the point of view of an adult, as logically significant, may not be distinguished by a young child from what is logically insignificant in this over-all sensory impression; we have all seen the importance attached by young children to what seemed to us inconsequential changes.

In contrast to what has been described in the case of the young child or infant, in adult life the external sensory impression is recognized as external, has become separated to a large extent from the existing need state or motor functions which are connected with the need state, and is defined or "seen" in quite different terms. In the course of development, as internal demands are subjected to delay and become less preemptory, the process of perception may become relatively free of the influence of the immediate drive state. *At the same time*, and in the course of the same process, we also become more and more free of the immediate and diffuse sensory impressions originally bound up with preemptory internal needs, their frustration or satisfaction, and the motor-actions involved in them. It becomes possible to "take distance"; the external world is perceived as separate, is articulated, and tends to be seen in terms of those abstract qualities which have more realistic, logical, and stable significance (e.g. a pipe is perceived as having a certain shape, as a smoking utensil, no matter whether one is smoking at the moment or not, or whether one smokes at all or not).

The development from the more

immediate, gross, and diffuse sensory-motor impression, closely tied to the drive state, to the relatively independently functioning "objective" and articulated perception that obtains in normal adults can be described, depending on one's interests and approach to the data, in different ways:

Werner (25, p. 487) states, "The very young child is 'stimulus-bound'; he is passively subjected to the forces of sensory stimulation," and he describes in much detail the development from the diffuse, subjective, "physiognomic" sort of perception to the increasingly articulated, "geometrical-technical" perception of adults.

Hartman (9) describes an aspect of the same process as follows: "In the earliest stages of development the dependence of . . . perception upon situations of 'need'—and upon the drives these needs represent—is quite obvious. . . . however, the reality ego gradually evolves itself precisely by freeing itself from the encroachment of such instinctual tendencies."

The development of perception in the direction of increasing freedom from the drive or need state and at the same time increasing freedom from the gross and immediate sensory impressions is an aspect of the general development of the ego and is closely tied to the development of other relatively autonomous ego functions (9); or, as Erikson (2) has described it, to the detachment of generalized modes from the body zones with which they were originally connected. This perceptual development seems especially closely tied to the development of thinking and conceptualization, which pre-supposes, as Rapaport (13) has emphasized, an increasing capacity to delay discharge. Finally, this development of perception may also be described as a development from a relatively passive or helpless condition, in the sense of an inability to delay drive discharge and, what seems like an essential correlate of such an inability, an inability to prevent or withhold until further development the immediate response to the gross sensory impression, to a condition of ego-activity, in the sense of

operating functions of delay and detour. Recently, drawing on earlier psychoanalytic literature as well as his own previous discussion of the Freudian concept of delay of discharge, Rapaport (15) has clarified and made useful such a conception of activity and passivity.

It is, of course, by no means the same thing to have a schematic picture of perceptual development as to understand the complex substance of it. One thing seems clear enough; whether or not as some have suggested (16, 17), cultural factors play a significant role in this, the movement toward more and more "objective," reality-oriented perception is a movement in the direction of increasingly fine and increasingly complex articulations of form and formal relationships. Objects of perception have their meaning for us above all in terms of their form, and realistic appraisal of them calls for the capacity to perceive that form precisely and to exclude, or at least to hold in abeyance, the response to other sensory impressions which may be co-existent with the formal ones but which are usually logically irrelevant. The capacity for such form articulations is not "given" in the infant. It develops only over a relatively extended period of time and, as indicated, along with the development of other functions. In some respects this development can be subjected to experiment and even to a degree of quantification. Werner (25, p. 115) reports the following experiment conducted by Knoblauch:

After training her subjects to respond positively—there was a small reward—to a circle of solid black set against an angular figure, the experimenter substituted a variety of other geometrical figures. These included solid ellipses of various breaths, a simple circle, a circular hole cut out of white cardboard, a low cylinder, a tall cylinder, a sphere, a cone, and four angular solid black figures. With three groups of subjects, mental defective children, normal children, and adults, she was able to measure the number of times any particular figure would be accepted as a substitute

for the circle by each group of subjects. The data was extremely interesting; among the low-grade feeble-minded children, the tall cylinder evoked the most positive responses and the contour circle, no response at all; among the normal children the sphere evoked the most positive response and the contour circle was responded to least, though somewhat; among the adults the contour circle was responded to most frequently and the tall cylinder the least among those that evoked any response at all. Werner says, "We must conclude that the development of optical percepts occurs through an increase of articulation. Children very low in the developmental scale may base their choice more often on the vague qualities of blackness, solidity, etc., rather than on real figural qualities. . . . normal children five to seven years of age may still tend to stress such 'qualities-of-the-whole' as blackness and solidity, but they also react distinctly to circularity *per se*, that is, to the specific geometrical shape. Of course, the more advanced the optical organization becomes, the more the subject will react on the basis of a strictly optical form. Therefore, with the adult, whenever the outlined circle appears as a member of the pair, it will be chosen as the most adequate substitute for the solid black circle."

It seems reasonable to assume that in perceptual development as in development in general there is a potential for regression, and in fact some experimental Rorschach data which confirm this is available (4). Beyond this, it may be assumed that earlier levels or modes of perception are never altogether superseded by later, more advanced modes, always leave their stamp on the more advanced modes and may influence them in various ways—as, for example, there are elements of physiognomic perception in much "objective" perception. We may also assume that in various ways earlier perceptual modes may be put to use by more advanced functions (11). In his recent discussion of the Rorschach response process, Schaffer (20) has discussed these issues in some detail as they are pertinent to the Rorschach, although he speaks primarily in terms of thought rather than perception. It appears that the perceptual activity of any person dur-

ing the course of a day, to say nothing of dream life or daydreams, fluctuates over a fairly wide range. A large poster which one passes while driving on the road is said to be "eye-catching" and may draw one to a second glance to notice its content. The painter, attempting to capture a scene, may have the capacity to shift his perception of it at will, now certain colors being outstanding, now a particular form or configuration, and so on. It hardly needs to be said that there will be individual differences on these matters; it may be said, also, that in part these differences may be usefully considered as individual perceptual-threshold differences. This issue will be considered again, briefly, later.

It is time now to ask what place color perception occupies in this development from more diffuse, immediate, passive sensory impression to more detached, actively articulated, and "objective" perception. Where, so to say, does it fit in? Though we can hardly claim to have confirmed it, we have tried to offer a somewhat broader and a developmental frame of reference for the generalization that was suggested by the Rorschach-color theories described before: putting aside the issue of its varieties for the moment, color perception is likely to involve processes and capacities which develop earlier than those involved in form perception; the color perception process seems one which is more immediate, more grossly sensory, and, in the sense in which this term has been used here before, a process requiring less ego activity than form perception. What are the implications of this as far as individual differences are concerned? We should expect that the more passive sort of perception would tend to be emphasized, in various ways and degrees, in individuals who might be characterized by a relative incapacity for, or disinclination to, delay of discharge with regard to impulses, needs, affects, etc. In the hierarchical organ-

ization of drive-delays and controls, derivative impulses, affects, or motivations, themselves in turn subject to further detour and refinement, an incapacity for delay of discharge can occur on many levels and in many forms and degrees, and one may speak of many forms and degrees of ego passivity. But whatever its level, we should expect such passivity to be reflected, again in various forms and degrees, in a resorting to or emphasis on more passive or immediate perceptual processes, e.g. gross color perception. Beyond individual differences in normal adults, we should expect a relative emphasis on the more simple and gross sorts of color perception among young children, and also among individuals with various types of pathology. Weak emotional controls, or emotional lability, which have ordinarily been considered as a specific condition for a relative emphasis on color in the Rorschach, would from this point of view be in the nature of a special case of a more general phenomenon; this is only one of many sorts and many degrees of "ego passivity."

I should like to turn, now, to three types of data and to evaluate our hypothesis in the light of them. These are: 1) a group of experimental studies on abstract thinking or conceptualization which have made use, in their materials, of at least partly perceptual problems, and involve color perception particularly; 2) developmental Rorschach data; and 3) some brief clinical Rorschach data.

These thinking or concept formation studies make use of sorting tasks in which the sortings may be made on the basis of either color or form, or, as in the case of the Vigotsky, three-dimensional qualities also. The studies are of two sorts: the subject may be presented with some simple geometric figures cut out of cardboard and of different colors (Weigl) or, in the Vigotsky, simple geometric forms in which height is also an important factor, and asked to make classifica-

tions of various kinds; or several such forms, for example, a green triangle and a yellow circle, may be placed before the subject while another form, say a green circle, is handed to him, and the subject is asked to choose that one which is "like" the one he has been given. In terms of our interest, the results of various investigators seem in good agreement: among patients with cerebral lesions studied by Weigl (24), schizophrenic patients studied by Hanfmann (7), Hanfmann and Kasanin (8) and young children reported by Werner (25), Revesz (17), and Thompson (23), there appears to be a clear tendency to make sortings first or exclusively on the basis of color.

How can we interpret such findings in terms of the place of color perception in ego development? The studies were for the most part designed to test and observe the capacity for abstract or conceptual thinking or to investigate the conditions of its absence, to observe and study "concrete" thinking. These results describe a tendency on the part of those individuals who are not capable of an advanced sort of abstract thinking or conceptualization to make sortings on the basis of color rather than on the basis of form. The sorting tasks, it is worth noting, do not necessarily call for an expressed principle or concept on which the sorting has been made. Sortings may be made, and among these groups mentioned ordinarily are made, on an immediate "perceptual" basis, that is, on the basis of immediately perceived likeness or dissimilarity and without conscious rationale. It turns out, in fact, that those individuals who are incapable of arriving at really conceptualized classifications are at the same time those who tend to be drawn toward color as a classification basis. We may conclude that the existence of psychological organizations which insure the capacity for delay and which are the pre-conditions for the existence of higher order or conceptual thinking (13) are

absent in these subjects; and it is this same absence, or this same state of relative ego passivity, which seems to be the condition for a relative gain in significance of color perception.

It is interesting in this connection to take note of certain qualitative aspects of the subject's behavior in relation to color sorting and form sorting respectively that have impressed themselves on the experimenters. A number of these observers described, in various ways, the immediacy, the impulsive quality, the absence of delay, or the passivity which appears in the subject's behavior in connection with color sortings in some contrast to the usual behavior in connection with form sortings:

Weigl, for example, states (24) that when his patients sorted, as they did, first on the basis of color, this response was not made with any apparent attitude of detachment, but rather, it seemed to the observer, that the response "was forced upon (him) by the sensorily manifest aspects of the situation." The similarity of this sort of color response to the general qualities of perception in early childhood or infancy described before is immediately clear, e.g. particularly Werner's description of the "stimulus-bound" quality of early perception. Weigl compares this behavior with that of his normal adult subjects. Under ordinary conditions his normal subjects were able to sort *either* according to form or according to color and apparently behaved in a more reflective and detached way. Occasionally, however, some of the normals behaved in relation to the materials in a way similar to the patients, and Weigl describes this behavior as "completely passive." Weigl noted, also, the response of his normal subjects under conditions when they had not fully mobilized themselves for the task: the normals, in first looking over the given material and *before reflection*, "without exception reported that . . . their first impression was that of 'color variety' in which the colors of similar qualities seemed to join together in 'color spots'." He also asked his normal subjects to sort "very quickly, inhibiting reflection in so far as possible"; most normal subjects sorted the material into four piles, corresponding to the four colors.

Similar results were obtained in the recent study of Hamlin, Stone, and

Moskowitz (6). When presenting their subjects, college students, with separate sorting tasks one of which involved sorting cards according to color and another sorting cards on which simple forms were printed, they found that the sortings were very significantly faster for the color task than for the form. In effect, by introducing the factor of time pressure or by asking for response without reflection, these experimenters are able to observe their normal subjects under conditions of relatively greater ego passivity than ordinary. It is important to note, also, that normal subjects are able, voluntarily, to shift to the more passive behavior upon request, or under time pressure, or, probably at times, simply when more activity is not called for.²

Hanfmann (7), reporting on the use of the Vigotsky test with normal subjects, reports results and qualitative observations of behavior along the same lines. She considers that her subjects, according to their "approach to the task," may be divided into two groups: 1) Those whose approach is characterized by "active thinking"—"subjects of this type show a strong preference for shape as a basis for groupings," and 2) those "in whose approach the perceptual . . . factors seemed to predominate" and whose behavior she also characterizes as "intuitive"; these subjects, she reports favor color and over-all size of blocks in groupings. Of course "perceptual factors" actually operate in the response of both groups, but in different ways. One might say that the perception of the second group tends to be dominated by the more gross and immediate sensory aspects of the situation,

while the first group, the more "active" subjects, are able to approach the problem in terms of what would ordinarily be its more logically relevant perceptual aspects.

In Hanfmann and Kasanin's study of thinking in schizophrenia (8), again with the use of the Vigotsky test, these factors are described in greater detail. As a result of their study, Hanfmann and Kasanin describe three levels of thinking, the most primitive or concrete, the intermediate level, and the abstract or truly conceptual level. They note the relationship between the perceptual qualities of the materials to which their subjects seem to respond and the level of thinking which those subjects demonstrated in the test. "Color, and to a lesser degree general size (height and area), seem to have a more immediate perceptual, at times even physiognomic appeal, and consequently prevail on the primitive level. Shape (prevails as a basis for sorting) on the intermediate level . . . on the level of true classifications there seems to be no definite preference for any one quality of the blocks . . ."

The authors' conclusion may be paraphrased as follows: On the most primitive, concrete level of sorting, where the sorting is not made with a detached, "objective" attitude or with any conception or principle in mind, but is rather made on the basis of the most immediate or impressive sensory groupings that "thrust themselves" upon the subjects, on this level the sortings tend to be made in terms of color; at a somewhat higher level—the "intermediate" level—where there is a somewhat greater movement toward a detached attitude and a conceptual principle, the condition in other words which might be characterized as one in which there is a greater capacity for delay, the shape of the objects outranks color in its perceptual importance and becomes the basis of sorting; at the highest level, where the subject's attitude is successfully detached and objective, the

²Revesz (17) advances essentially the same conclusion in connection with some of his results. On the basis of studies of children, he concludes that color perception is a more "primitive" process than that of form; he suggests, however, that particularly sophisticated and, as he says, "psychologically trained" adults are able to assume a more passive attitude in relation to the task if they choose to do so.

subject is no longer *directed by* sensory or perceptual impressions but can, so to say, *make use of* such impressions without bias for the purpose of solving the task.

To sum up the trend of these data: color response, as a more immediate process and one requiring less activity than the response to shape or form, is associated with more primitive mental functioning. The behavioral attitude, though perhaps not necessarily the subjective feeling, that seems associated with this perceptual response is one that can be characterized by passivity in relation to the external stimulus.

It is interesting, particularly with the results obtained in color and form sorting tests with children in mind, to consider what is known about the appearance and development of color response on the Rorschach in children. We can treat such data here only in a very cursory way.

The results of systematic developmental Rorschach study, as well as less rigorously presented reports by clinical workers with much experience with children, are quite consistent and unvarying in their observations and conclusions regarding this issue. Ames (1), Ford (3), Halpern (5), and Klopfer (10) have all found that among the color responses in the Rorschach records of very young children, pure C responses tend to predominate; in somewhat older children CF responses occupy a more important role and the pure C responses drop out rapidly; and at a still later age FC responses play an increasing part. We need not consider here the specific age ranges which seem to be correlated with these movements.

Although the general movement of color responses from pure C to CF to FC with increasing age, among children, seems consonant with the considerations and experimental data described so far, there is one aspect of the Rorschach data on children which seems, at first, to contradict the general picture. This is the fact,

which most Rorschach workers have noted, that among the youngest children tested, 2 to 2½ years of age for example, color response tends to disappear altogether. This seems at first glance a strange fact and seems even discontinuous with the over-all trend toward more pure color emphasis the younger the child. Its explanation, I think, must be sought in an understanding of the demands which the Rorschach situation itself imposes.

The situation seems to be this: the Rorschach situation does not demand simply any sort of perceptual response; it demands, rather, a response that meets certain standards of conceptualization, if it is to be counted as a response at all. As Schafer (20) has recently pointed out, the standard Rorschach situation is one in which a subject, though he may permit himself a certain imaginativeness, is implicitly assumed to retain an essential reality judgment which in this case means care as to form accuracy. Not neglecting other aspects of the instructions, Schafer says, "The instructions indicate that the responses should fit the configurations and properties of the blots." This means, in other words, that the Rorschach situation demands not merely any response to the sensory impression of color, but rather the integration of that impression with formal aspects of the stimulus, if possible, or at least with appropriately associated content. As far as the Rorschach is concerned, most pure C responses are already at the very bottom of the conceptual scale; color-naming responses tend to be considered off scale altogether, some Rorschach workers with children considering such responses as pure C and counting them accordingly, others not counting them as responses at all. The evidence indicates clearly that color responsiveness in children extends far below this conceptual level. Werner (25) reports that, on the basis of bodily reactions, very young infants seem to be able to discriminate the primary colors. He

presents data, also, which indicate that the capacity for color-naming, demanding a certain level of verbal conceptualization, advances only rather slowly; in the study he refers to, accuracy in color-naming increased, at 6 years of age, to only 62 per cent. Thus it seems clear that the absence of what may be technically accepted as color responses in the Rorschachs of very young children by no means indicates an actual absence of responsiveness to the color stimulus. As we go down in the chronological scale, Rorschach responses become progressively more diffuse, global and concrete, and along with this color responses move from FC to CF to pure C; beyond this, color may well occupy a more prominent part of the over-all diffuse sensory impression, but this is the point at which the Rorschach scale, so to speak, stops. The importance of this issue becomes clear in evaluating the Rorschach data on children with respect to color response. Ames and Ford, for example, consider color-naming responses as beneath the conceptual level required for Rorschach responses; they do not include color namings in their over-all tabulations or tabulations of pure color responses. Yet Ford, for example, reports that 48 per cent of her three-year-olds gave color-naming responses, and Ames similarly reports a high incidence of color-naming in the early age range. The justification of these tabulation procedures as far as ordinary Rorschach work is concerned is not in question here; but the apparent disappearance of color responsiveness in the Rorschachs of young children looks different when viewed in this light.

It may be mentioned that essentially the same issue comes up in connection with Stein's (22) tachistoscopic work with the Rorschach. In a study of normal adults he administered the Rorschach tachistoscopically with various exposures ranging down to .01 second. He found, in general, that the summed per cent of the bright color

determinants steadily decreased with an increase in exposure time from .10 at a second to full exposure. He says, "Moreover, the bright color determinants in which form is secondary, decreased more rapidly with increasing exposure time . . . " Pure color responses dropped especially fast with increased exposure time. So far, the results seem much like what one would expect; the shorter the time exposure, the more the interference with normal delay and perceptual activity, and the more prominent the response to color becomes. But, in apparent contradiction to this, at the very shortest exposure time Stein found a relative drop in color responsiveness. In attempting to explain this drop in color response, Stein considered that "their lack of saturation at such brief exposure" may be such that the Rorschach colors are simply not effective stimuli. At the same time, however, he mentions that the card was considered rejected and no responses counted if the subject responded in such a way as the following: "It looked like it was colored but it didn't mean anything to me." It seems clear from this illustration that color was, in fact, a stimulus and an effective one, but that there was not sufficient time for the activity to take place necessary to organize the color stimulus into a form acceptable as a Rorschach response. Needless to say, the number of card rejections, that is the number of occasions in which it was not possible for the subject to mobilize sufficient perceptual activity to produce a response, increased very substantially at the shortest exposures.

Whether these considerations make more understandable the tendency of severely regressed chronic schizophrenics to give either pure C responses or no color responses at all is an open question, but it seems likely that such factors are important in these cases as well.

One test of the usefulness and validity of any Rorschach hypothesis, such as the one regarding color des-

cribed here, must be its explanatory value in actual clinical work. Limitations of space prevent our presentation of any but very brief and limited clinical Rorschach samples or vignettes. With a view to considering the sort of problems of a clinical interpretation of Rorschach color mentioned at the very beginning of this paper, I have selected samples from the Rorschach protocols of a chronic schizophrenic, an hysteric, and a narcissistic character disorder. The reader will understand that our interest here is certainly not to demonstrate that diagnostic conclusions can be drawn from color responses alone; it is, in fact, in quite the other direction, namely, in considering the nature of the color response in three individuals whose character and pathology is well delineated from other sources.

The first case is that of a 42-year-old male chronic schizophrenic patient who had scratched out a barely ambulatory adjustment for many years. When seen recently at a psychiatric sanitarium, he was undergoing some degree of further decompensation which made hospitalization necessary at that time. His Rorschach contained forty-seven responses, somewhat more than one would have expected from the extent of his general dilapidation, but probably reflecting those doggedly retained adaptive capacities which had permitted him to function at a marginal level outside the hospital for so long. Contaminations, gross confabulations, perseverative responses, confused and peculiar verbalizations, and gross fluidity of thinking were all conspicuous. His F plus percent was low. Among the determinants, he had one M, the popular on Card III, four FC of which two involved an arbitrary use of color, one CF and five pure C responses.

I should like to consider a particular color response that he gave, in content quite innocuous and ordinary, but unusual in the extent to which it revealed certain aspects of his ego-functioning: responding to the

usual area of the popular animal response on Card VIII, he said: "These two red things here (the animal figures) look like rats . . . (pause) . . . only they're red . . . red rats . . . I never heard of that . . . only the shape looks like rats." In this response, the form, certainly one of the most clear-cut and obvious in the Rorschach, was accurately perceived or articulated. But it is at the same time clear that this perception is not at the level at which we are accustomed to thinking of form perception. The concreteness of the response is obvious. An adequate form perception or delineation implies the capacity to abstract perceptually the outline or shape regardless of the other sensory stimuli which might surround or be enveloped by that shape; here, this capacity was clearly not present. Once impressed by the gross, concrete sensory stimulus, the patient was not able to delay, or to hold back his response to the color, to say nothing of the even more highly developed function of making use of it in, for example, an adequate FC response. This incapacity reflects a severe immobilization of the ego-functions involved. The patient's subjective feeling of helplessness and passivity is conveyed, not only in his verbalization in connection with the spontaneous response, but also in his answer to inquiry. When the examiner later went back to this response and asked, "Red rats?", he answered, "Very peculiar . . . but I mean I saw them that way . . . you don't see red rats . . . but they're shaped like rats." What gives this response and verbalization its almost poignant quality is the fact that this man's capacity to take some realistic distance from his own production was not altogether absent; he was well aware of its inadequacy.³

³ The reader may be struck by the similarity between the subjective feeling of passivity and helplessness in this patient, in connection with the response quoted, and what is called, in organic patients, "impotence." They involve, I think, essentially the same process.

The response quoted was followed immediately by another one, and it seems possible to see in this sequence the further breakdown of the extremely shaky and already inadequate detachment, and the patient's own greater passivity in the fact of his response to the color stimulus: this second response was a pure C—"and the redness (now all of the red area on Card VIII) reminds me of tincture of merthiolate . . . (and now a further breakdown and detachment) . . . like I have on my hand here."

It happened that six months later this patient had recompensated to a considerable degree, and it is interesting to compare his handling of the same stimulus on Card VIII at that time. His response was, "This looks like a rat—the same on the other side . . . (long pause) . . . I was going to say it looks like ink—I said it before, but . . . I can't see anything else." (He hands the card back abruptly.) In the inquiry he was asked, "Ink?", and he answered, "Because I think I said all the red looked like ink the last time. . . It doesn't look like ink this time. . . It feels funny. . . It feels like a lot of things disappeared the way I looked at things before. I thought I would remember. I guess sometimes it pays not to remember."

In an unusually explicit way, he describes at least some aspects of the reconstituted ego functioning. The situation, concerning this particular response and the verbalization that followed it, is all the more clear because the response content, originally, was quite ordinary and unremarkable. When he says, "It pays not to remember," he is surely not referring, in connection with this particular response at least, to the content of the response. His remark seems to derive, rather, from some vague subjective feeling of increased control, including increased repressive capacity certainly, but in this instance a control that reflects itself more in the capacity to detach himself from the over-all

concrete sensory impression and to hold back the response to the color-stimulus in particular. He is able now, although obviously barely able, to achieve a true form response, to make the perceptual abstraction which that implies, and to muster the degree of ego activity which is necessary for it. In the normal subject, this process functions so smoothly and so quickly as not to be noticeable; here, it is so effortful as to be conspicuous. It might be mentioned that the color determinants in the second Rorschach consisted of two FC, of which one was a FC—, two CF, and only one pure C; it may be mentioned, also, that at the time of the second testing this man was, in general clinical observation, a good deal more emotionally responsive.

Our second Rorschach excerpt is from the protocol of a 39-year-old hysterical woman. This patient's adjustment was characterized, and had been for many years, by many typically hysterical features: a general repressiveness, lack of reflectiveness, and naivete; a good deal of romantic fantasy; and, above all, a conspicuously labile emotionality. It was, in fact, a rapidly increasing difficulty in emotional control, manifest mostly in outbursts of tears, or angry outbursts toward various members of her family that, having reached such a pitch as to be frightening to both her family and her, had caused her to seek hospitalization. Her extreme emotional lability was evident, also, during her short stay in the sanitarium, beginning with an outburst of tears almost immediately upon meeting the admitting therapist.

Her Rorschach, except perhaps for one feature, much as one might expect. There were practically no human movement responses, only one FM;⁴ there was, however, an abundance of color responses including

⁴ The scoring here follows that described by Rapaport, Schafer, and Gill (16).

three FC, one F/C, two CF, and three C/F, making a balance of .5/7, if one includes the F/C and C/F scores in the tabulation. Her form level was generally quite high, though lowered somewhat by the presence of a number of impulsive, gross W responses. In terms of the usual content categories, there were five responses, out of a total of 49, in the category of sex or sexual anatomy. The accumulation of 49 responses is the unusual feature I referred to before, and is undoubtedly attributable to the presence of a rather ambitious, persistent, compulsive streak in her make-up.

If we examine closely some of this patient's color responses with an eye to comparing them, and the verbalization surrounding them, with those of our first case, there appear both marked differences and certain interesting similarities. Her first color response, which was her first response to Card II, was as follows: "Oh, my heavens! . . . (flushes . . . a brief burst of nervous laughter) . . . oh! . . . well, I could say it would look just like some picture in a gynecological magazine or book of some kind." In the inquiry to this response it became clear that the response was a formally rather vague W, determined largely by the immediate color impression, though integrated to some extent with form by way of sexual association, a content which was obviously much on her mind. Other color responses which appear later in the Rorschach seem to convey many of the same perceptual qualities as this one, though without the sexual content. Her first response, for example, to Card IX is, "That looks like a burst of something . . . just looks like a great big burst of color more than anything else." The first response to Card X is, "Goodness! . . . it looks like something . . . under a microscope . . . in color." Both of these responses are W's and both are accompanied by essentially the same sort of tense discharge which was apparent in connection with the earlier response. In these responses,

also, she finally managed to achieve some degree of integration of color with form, but a quite weak one.

The exclamations, flushing, and nervous hesitations that accompanied these responses leave little doubt that the perceptions were accompanied by a subjective experience of being struck by something or being taken by surprise, that is, a subjective experience of relative passivity. When one sees, in a Rorschach of this sort, such conspicuous evidence that the patient is "struck" by something, it is tempting to assume that the color contains somehow an intrinsic affective value. Yet it seems that even in this case, to say nothing of the previous one, such an assumption is not necessary. It is necessary to remember that, at this particular time, the patient was characterized by a serious weakness of control on a certain level, the level of affect control. She is faced, then, with a perceptual stimulus which, by its nature, offers the possibility of a more immediate, less actively controlled sort of response than other kinds of perceptual stimuli. The individual with more secure controls and more effective channels for a modulated kind of expression and spontaneity can handle this task easily and can *make use* of the initial sensory impression in a controlled and comfortable way. But this is just what the present patient is not able to do. She cannot safely relax the thin kind of control which she tries to maintain. She seems drawn to that aspect of the stimulus which calls for less delay and less reflection, i.e. less ego activity, and which therefore offers greater possibility of immediate discharge, but once there, so to say, she cannot handle her own immediate response, integrate it satisfactorily with formal considerations, or modulate it. That she makes some active effort at control seems clear, and is suggested, for example, by the thirty-second reaction time which precedes the first color response quoted, on Card II; this is the longest reaction

time in her entire protocol. But the outcome of such efforts at mobilization is nevertheless a response dominated by the immediate, gross, sensory impression and accompanied by small scale affective discharges in the form of flushing and exclamations. Such discharges also may be reflected in the tone of the content of the responses themselves, e.g. "bursting." Certainly the level of integration of color and form which she achieves and the level of ego activity which is reflected in that integration are greater than that of the previous case; the previous picture of flaccid helplessness is not evident here. We may speak, then, of quite a different level of ego passivity.

It may be objected that, particularly regarding the patient's exclamations, the reactions we are discussing are rather to the content of the response, particularly in the case of the sexual response, than to the perceptual situation. It must be agreed that some such reaction to the particular content which springs to her mind probably does play a role in the behavior that finally appears, but this seems to be a secondary aspect of the process. It would seem, and here our argument would be akin to that of Rickers-Ovsiankina, that the condition of momentary passivity promoted by the perceptual situation is just that condition under which highly charged content is likely to come closer to the surface.

The third case from whose Rorschach we shall present some excerpts seems to illustrate a sort of passivity which is different from that of either of the previous two cases. This is a young man diagnosed, on the basis of clinical information and test results, as a narcissistic character disorder. It is not necessary for our purposes to go into the details of this patient's character; our chief interest here is in one outstanding consequence of it, his impulsive behavior. Impulsive action, sometimes with a psychopathic tinge to it, was a pervasive feature of his

life; it reflected itself in large and important life issues — e.g. marriage, divorce, and his business life — and also in many small aspects of his daily life. Business decisions, the buying of a car, even marriage, were carried out speedily, without a great deal of reflection, and, as far as one could tell, with quite limited amounts of affect. Certainly the affect that he displayed was nowhere near that of the patient just discussed, although on the other hand, he was by no means as bland as the first patient described here.

His Rorschach was an unusually lengthy one, although many of the responses, 77 in all, were pretentious and shallow. His color responses included eight FC and F/C, three CF, one C/F, and two pure C. In this patient, whose generally pleased preoccupation with his own looks, the style of his car, and especially those vagaries of his personality or behavior which he considered unusual, was very much in evidence, it is not surprising that many of his Rorschach responses were reeled off in a rather exhibitionistic way and with special pleasure at those responses which he considered to be remarkable or unusually "weird." In marked contrast to the previous patient, there was no discernible affect, beyond the sort of pleasure described, accompanying his color responses. His manner was one of dictating what he felt confident would be an interesting record.

To Card II, for example, where, of course, he first encounters color, after first giving a W response of "clowns," he goes on "... then, blood ... blood stains," a pause followed by another response that does not become clear until the inquiry, "... toilet ... this isn't particularly pretty"—this last remark is said with particularly exaggerated emphasis, as though to call the examiner's attention to how pathological the response was. He returns to the color a few responses later with the following: "It seems to be like red underwear there (the upper red area)"; a few responses further on, he says,

"Upside down it looks like an explosion . . . like a volcano exploding . . . (and now obviously wanting to go into his "associations" and bristling somewhat at the restrictions of the test . . .) . . . are you interested in what I am thinking or just primarily what this represents?" Finally, his last remark on handing the card back, again with special emphasis, "I don't like that red."

The "toilet" response turns out to be associated loosely with the previous "blood" response and to include all of the black, center white, and lower red areas of the card; when asked about this response in the inquiry, he replied, again obviously pleased, "Ah, I was afraid you'd get to that. It seems to be a blast of blood. That's been a big problem of mine . . . it seemed to be associated with blood coming out of my rectum. I always have a fear of blood coming out of my stool — or rectum. I have a cyst . . ."

Thus, there are three color-dominated responses to a single card: "blood," the vaguely formed "red underwear," and the equally vaguely formed "volcano." With these few excerpts, I have tried to convey the exceedingly impulsive, yet unruffled and even exhibitionistic tone that ran throughout this patient's Rorschach. His passivity in the face of the color-stimulus, i.e. his perceptual tendency toward the immediate, gross, only vaguely articulated sensory impression without further development, is obvious enough. The absence of detachment in his response seems even to include, as in the first case, some loss of distinction between the objective inkblot stimulus and himself. It is interesting to note, however, that despite his abundant use of color only barely integrated with form, and sometimes not at all, there was no indication of either a subjective feeling of being "struck" by the stimulus, as in the second case, or, as with the first patient, of a feeling of helplessness in the face of it. He apparently found the more immediate perceptual

route a congenial one, and could permit himself, relatively comfortably and apparently even with a subjective feeling of deliberateness, to respond to the sensory impression in an immediate, rather diffuse, and undetached way.

The conditions which make for the absence of a subjective feeling of passivity even when such passivity is abundantly evident to the objective observer, seems a very interesting issue, but need not concern us here. Suffice it to mention that this discrepancy, apparent in the Rorschach, found its exact parallel in clinical observation. His quick, unreflective impulsive behavior could not help but strike anyone as an incapacity to delay, to hold back and consider consequences, or to reflect on possible alternatives; yet the patient himself in no way *felt* at the mercy of his impulses, but rather that every action of his was deliberate and willful. Our reason for considering this patient's Rorschach is primarily to illustrate yet another form of pathological passivity, manifest clinically primarily in impulsive action and again manifest in the Rorschach in color-dominated responses.

By examining briefly the color responsiveness of these three patients I have tried to illustrate three different sorts, and possibly also three different degrees, of passivity. In the last case this passivity was manifest in impulsive action; in the second, it seemed manifest in affective outbursts; and in the first case, in concrete, syncretic thinking and a general immobilization. The Rorschachs of all of these cases included color-dominated responses prominently, but it seems inadequate to consider this a reflection in all of them, of a way or ways of handling affect alone. In the complex, hierarchical organization of ego activity, regressive breakdown or inadequate development can take place on different levels. It appears that when such a condition exists it is reflected in the perceptual process. Instead of

a detached or objective perception, primarily in terms of formal characteristics, in which various less essential sensory impressions, e.g. color, are either disregarded or, as in the more spontaneous, expressive, and flexible normals whom we might describe as "colorful" in personality, *made use of* in a supplementary and enriching way, instead of this, the internal response to the gross, sensory aspects of the stimulus tends to one degree or another, to take precedence over and push aside its logically more significant formal characteristics.

Some incidental mention was made before of the matter of perceptual thresholds and their connection with the problems we are considering here, and I should like, in conclusion, to return to this issue very briefly. However gross such a statement may be, to say that an individual's perceptual tendencies lean, for whatever reason, toward relatively more passive and immediate routes or relatively more active and detached ones, is to say something, also, about perceptual thresholds. It may be said that the more immediate the response to a sensory stimulus, i.e., the less activity that intervenes between the effective presentation of the stimulus and the organization of some sort of perceptual response, the lower the perceptual threshold for that stimulus. As far as the Rorschach is concerned, certainly, with all its complexity, "immediacy" cannot be translated into such concrete time measure as, for example, reaction time. It seems possible, however, that with simplified and better controlled experimental devices, including for example the use of a tachistoscope, the immediacy of a perceptual response to a sensory stimulation may be measured. It may be, for example, that individuals whose perceptual tendency is in our terms relatively more passive and immediate, and whose Rorschach would consequently be characterized by color-dominated responses, would show, on tachistoscopic presentation, rela-

tively, lower thresholds for the simple recognition of color. One might expect that those same individuals would, on the other hand, have a more difficult time in the active discernment and articulation of a more complex stimulus, and there would show relatively high thresholds. These things remain problems for empirical study. At any rate, it seems that through such considerations our interest joins that of the psychoanalytically influenced workers who have been interested in the function of thresholds in early ego development.

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The Normal Personality: An Analysis of Rorschach and Thematic Apperception Test Responses of a Group of College Students¹

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The psychological study here reported was one part of an intensive investigation of a group of able, outstanding young men and women studying in three small liberal arts colleges. The objective of the study was the further clarification of the concept of normal personality. Normality, for the purposes of the investigation, was understood as the ability to maintain an harmonious and productive relationship with the environment and with the self. The normal person was assumed to be a "going concern," able to maintain a reasonably positive balance between outer pressures and inner needs without intolerable expenditures by the environment or by the self. A supposition to be tested, though not necessarily expected to be true, was that the subjects selected for study would be free of psychoses and neuroses.

The presumably normal subjects chosen for study were the elected student council members of the three colleges over a period of two years. They constituted a highly selected group from an already highly selected youth population, since admission to these particular colleges is the end result of many selective processes. The investigators assumed that election by their peers to positions of responsibility was a further certification that these individuals did not depart adversely from the general pattern of behavior and emotion which makes for successful adjustment. Sixty-six

were elected to the councils during the two-year period. One of the group declined to participate in this investigation. One left college before the material was completely collected. The remaining sixty-four entered voluntarily into the undertaking.

A three-fold study was conducted by a staff of psychiatrists, social case workers and psychologists. The first step was to administer a psychological test battery consisting of a scholastic aptitude test and individual administrations of the Rorschach and Thematic Apperception Test. Second, each student talked, for a total of six hours, to one of the staff psychiatrists. Third, the parents of each student were interviewed by a case worker in the student's home. Three to four hours were usually spent with the parents, although in one or two instances the time was cut to two hours. In two cases the parent interview was conducted somewhere other than in the home. Although no rigid procedure or theoretical orientation was imposed upon psychiatrists or case workers, they were expected to explore with students and parents the student's developmental history, his relationships with parents, siblings and peers, the successes and failures he had encountered, and his feelings about them. The students were asked about the routines of their lives, in an effort to discover what regularities they observed. Their fears, often repeated dreams, and unusual habits were discussed. Sex education and behavior were touched upon briefly. The parents were asked to give an account of the lives and adjustments of the grandparents and of their own developmental histories as well as that

¹ The Student Council Study was supported by the William T. Grant Foundation and was carried out under the direction of Earl D. Bond, M.D., of the Institute of the Pennsylvania Hospital. The colleges involved in the study were Bryn Mawr, Haverford, and Swarthmore.

of their son or daughter participating in the study.

Follow-up studies will be made at intervals to determine how these normal young people fare in adult life. The first full scale follow-up is now almost complete. Bond has reported the coordinated study elsewhere. (1)

The present paper is devoted to an analysis of the psychological battery. The results of the three approaches sustain the original hypothesis of the investigation, that the sixty-four students would be entirely without psychoses. The assumption that they would be without neuroses has had to be revised, for it was found that the group was by no means homogeneous in its normalcy. Twenty-eight of them (roughly 43 per cent) maintained a high level of functioning with apparent ease; 23 (or 36 per cent) bought adjustment at an appreciable cost, showing some neurotic traits; 12 (or almost 19 per cent) struggled with great insecurity or hostility, or both, and seemed to be less successful than the others in maintaining the outward aspect of smooth adjustment.

The analysis of psychological data classifies the students, on the basis of the psychiatrist's judgment, at the three levels of emotional health described above. These levels are designated respectively, Group A, Group B, Group C. Known history during the period of the investigation was also used to modify and give further dimension to the description of the normal, though this did not materially change the positions assigned to individuals on the basis of the psychiatric interviews and social case work data. In cases of doubtful placement, the psychiatric judgment and history were carefully weighed, one against the other. The groupings did not take into consideration the psychological test findings, since we wished specifically to scrutinize the nature of psychological test data produced by the different levels of adjustment. The assignment of a student to a group

was made before the analysis of the psychological data was begun.

After the analysis of the student council data had been completed, the results were compared with a set of data derived from a group of students known to be not comfortably or successfully adjusted in their college community. This group, hereafter called D, was composed of twenty-two students who had been referred to the college psychiatrist because of emotional problems troubling enough to be a conspicuous handicap. None of this group was psychotic. Two of them were occasionally confused in their thinking. All of them were at least temporarily lowered in efficiency and well-being by the emotional disturbance which was the occasion for the psychiatric referral. They do not constitute an extreme group. For this reason, any differences found between them and the student council group are especially interesting.

The comparison group were all women students. It would have been preferable to have available, as we did not, a group of both men and women; but, in the absence of clear evidence of sex differences in the tests used, the employment of the one-sex group for comparison purposes was thought permissible. The nature of the sex ratio in the C group, which contains a relatively high proportion of males, suggests that if there are any reliable sex differences in the tests used, the differences between the student council and our psychiatric group tend to minimize the real differences.

ANALYSIS OF PSYCHOLOGICAL DATA *Scholastic Aptitude Test*²

This test was divided into a verbal and a mathematical section. The mean score on each is set at 500 for

² A scholastic aptitude test equivalent in content and difficulty to the college entrance examination was provided and scored by the Educational Testing Service of Princeton, New Jersey.

all entering college Freshmen. The student council mean score on the verbal section of the test was 677, with a s.d. of 75.74. The mean score of the mathematical test was 533, s.d. = 92.4. These students were obviously able people.

Another and perhaps more acute indication of their relative ability is their scores on a scholastic aptitude test administered near the time of entrance into college³ since the scores on this test can be compared directly with those achieved by the comparison group at the same stage of development. On the verbal test the mean score for the total student council group was 589; on the mathematical section the mean score was 566. Corresponding mean scores for comparison Group D at entrance to college were 615 Verbal and 541 Mathematical. Neither the difference between the verbal means nor the difference between mathematical means is statistically significant. The difference between Verbal means⁴: $t = 1.34$; and between Mathematical means $t = .9$. Further, the verbal mean of Group A is 11 points higher than that for Group C, but this is again not statistically significant.

The psychiatric group of this study, being selected on the basis of an emotional problem, were not necessarily or even usually failing or doing poor work in college courses. For this reason it is not, perhaps, surprising that their scholastic aptitude scores show no significant difference from those of the student leaders. Nevertheless, it is interesting that their emotional problems seem not to have been the upshot of a rigorous academic program, for their studies were not offering them insuperable hurdles.

³ This was the usual College Board Entrance Examination.

⁴ Degrees of freedom for both calculations was 78 since in the student council group, seven of the men had not, because of special circumstances, been required to take the pre-college test administered to all the others.

Analysis of the Rorschach

The aspects of the Rorschach subjected to analysis were: (1) productivity; (2) the number of M; (3) the *Erlebnistypus*; (4) the relation of $F_c + F_k$ to F; (5) the relationship of undifferentiated to differentiated shading; and (6) the number of m, K and k. Two other measures calculated were thought to be promising have not, to our knowledge, previously been reported in the literature. These we have called the morbidity score and the discomfort score. It should be emphasized at the outset that our results strongly support the traditional Rorschach thesis that no one determinant or ratio can alone suffice to identify either adjustment or maladjustment. Our group A subjects appear from time to time in company with those from Group C. Even members of the psychiatric group turn up now and then beside our most harmoniously functioning A people. This analysis has reiterated that the so-called normals achieve the management of their weaknesses — even of their neuroses — in a variety of ways. Some use one kind of strength, others employ another to achieve this end. It can be added, however, that the A and B Rorschachs, and to a lesser extent even the C's, have a sound and feeling different from the psychiatric or D group. Some of this difference is caught in the scoring symbols. Some of it lies in a general choice of words, in the variety and richness of content, in humor and *joie de vivre* — little of which is fully captured in the scoring.

Productivity

The mean number of responses for Group A was 39.4; for B, 46.8; for C, 39.9; for D, 30.9. The medians are 38, 42, 40 and 36 respectively. These differences were tested for significance as between student council and D group and as between the various subgroups.

Testing for significance of differ-

ence in productivity between Student Council Group A and Student Council Group B, $t = 1.16$; and between Group A and Group D, $t = 1.10$; and between total Student Council Group and Group D, $t = 1.76$. None is statistically significant. However, it was interesting to note that in this fairly small sample, over-producing individuals turned up in two groups: in Groups B and D. Remembering that B Group people are adjusted with considerable effort, we may surmise that these are the people who feel they must sing for their suppers, justifying their existence by extreme exertions. The D Group over-producers are, as we know by their Rorschachs, driven by many of the same anxieties; but they are driven much harder, and in their great effort, judgment becomes blurred and the quality of product deteriorates. Some Group C people might rise to Group B if they invested more effort in adjustment. But on the other hand, this additional extension of themselves, with concomitant anxiety, might bring them into more pronounced difficulty.

No single refusal of a plate occurred in the student council group. Only one was offered by the D group, and this refusal was redeemed by three responses on the Inquiry. Thus, rejection is so rarely resorted to, even by our less happily adjusted subjects, that its occurrence may be regarded as a very marked deviation.

The M Variable

The student council group showed

wide variability in M production, ranging from none at all by one fairly aggressive member of Group C to thirty by a highly endowed, intensely motivated girl in Group B. (See Table I.) The median number for each of the two main groups of students, council and non-council, taken separately, is six. Surprisingly, five student council members gave only one M. One of these people was outstanding throughout college, scoring very high in scholastic aptitude and winning a variety of honors and responsibilities from Freshman year onward. Though clear cut and non-overlapping deficiencies do not appear between the student council and the comparison groups, the trend of the findings sustain, on the whole, the established precedent that emotional disturbance tends to deplete M production in quantity and in quality.

The Erlebnistypus

Forty-nine (76.5 per cent) of the student council group are more heavily weighted on the introversive side. Ten of them are extratensive and five ambi-equal. Two of the extratensives are from Group A, three from Group B, five from Group C. One ambi-equal is in Group C. Exactly half of Group D is introversive, two are ambi-equal, and nine (40.9 per cent) are extratensive. The three-way distribution of categories of the two groups was tested for significance of difference by chi-square. The difference is statistically significant at the .02 level of confidence. Chi-square equals 5.44, significant at the .02 level of con-

TABLE I. Distributions of M in the Four Groups

Production of M	Group A	Group B	Group C	Percent of council groups A, B, C	Group D	Percent of comparison Group D
0 M's.....	..	..	1	.....	2	.....
1 M.....	..	1	2	16	2	27
2 or 3 M.....	2	1	1	.....	2	.....
4 or 5 M.....	2	6	2	25	4	18
6-10 M.....	8	6	4	26	7	33
11-17 M.....	7	6	1	22	4	18
18+ M.....	7	6	1	11	1	4
	2	4	1			

fidence. It seems probable that adjustment in these colleges, where a great deal of self responsibility is expected of students, demands in high degree the ability to postpone action in the interest of long-term goals, to withdraw into the self, to work problems out in fantasy. The tendency to respond with emotional lability and to depend predominantly upon the environment for values, appears to be unadaptive. This might explain the high incidence of the introversive mode among the student council members and for the relatively high proportion of the C and D group found using the extratensive mode. (These students were all in the very late teens or early twenties, hence should have been well beyond the withdrawing movement attributable to adolescence.)

Closely related to the problem of the Erlebnistypus is the FC:CF+C ratio. Klopfer (2) *et al* advance the view that good adjustment is associated with a preponderance of FC in the color ratio; but when the total council group was compared with Group D, a chi-square of 9.56 was found, significant at the .02 level of confidence. Furthermore, the trend from Group A to B to C to D, though the difference from class to class is not statistically significant, was in a consistent direction, with Group A less frequently using CF+C>FC than Group B, and so on.

F:Fc+FK

Healthful functioning limits for the ratio F:Fc+FK have been suggested by Klopfer *et al* (2) to be $\frac{1}{4}$ through $\frac{3}{4}$ to Fc+FK. A three-cell table comparing the student council group in this ratio with Group D yielded a chi-square of 10.064, significant at the .01 level of confidence. Since all four groups run very low in F percentage, the difference in the ratios is related to the Fc+FK production. The difference in distribution arises out of relatively heavy representation of the Fc+FK> $\frac{3}{4}$ F end

of the distribution by council members, and by Group D of the Fc+FK < $\frac{1}{4}$ F end. Forty-eight per cent of the council group exceeds the upper limit set for Fc+FK. Roughly eight percent fall below it. These results suggest two possible surmises. One is that the small, somewhat cloistered college attracts and provides a favorable milieu for the student with a high Fc+FK component. Despite this fact, the psychiatric group in this setting pile up a relatively high count in the Fc+FK< $\frac{1}{4}$ F cell, suggesting that in these colleges downward deviation is more serious than upward. A second surmise is that "election by their peers," the selective factor in this sample of "normal" students, is the circumstance which determines the high Fc+FK. Indeed it would be in accord with Rorschach theory to find students who seek and receive an avowal of acceptance by their peers (viz. election) to be high in the contact component. Yet there is in the student body of the small selective college as a whole a difficult to define quality which gives us reason to advance the first hypothesis. Monroe⁵ has found striking and characteristically different constellations of personality in the student populations of different types of colleges. At Sarah Lawrence, for example, she found the inflated M as we did in the three colleges of the present study. On the other hand she found a very high F column at two larger institutions with more heterogeneous programs and student bodies. The question of whether the high Fc+FK component is characteristically high in a randomly selected sample of upperclassmen in the small liberal arts college can and should be put to the test.

Undifferentiated to Differentiated Shading Ratio

Only two student council members, both in Group C, gave undifferentiated shading responses more fre-

⁵ Personal communication.

quently than differentiated ones. This is 3 per cent of the council members. The undifferentiated shading response clearly is not much employed by these well-adjusted college students. Five, or 22 per cent, of Group D used undifferentiated shading more frequently. This is a startling difference between the two groups.

The Morbidity Score

The morbidity score here proposed is based upon content. It rests primarily upon the affect expressed in content and attempts to quantify overtones of the protocol which have been used to a large degree in a qualitative way. Some of the data used in this measure are specifically scorable by existing schema. Others are scorable but in the scoring lose some of their force. In brief, the morbidity score is derived by summing all responses expressing dysphoric affect—responses expressing hostile, destructive or anatomical concepts. It embraces notions of disgust, decay, disintegration, mutilation, or terror. Included also are bizarre or disordered concepts. Overtly but not symbolically expressed sexual responses were included on the ground that in this population a blatantly expressed sexual concept represents some weakening of ego defenses.

A difference of 3.79 was found between the means of the student council and psychiatric groups. This is significant at the .01 level of confidence ($t = 2.73$, $df = 85$). The difference between the means of the A and C groups was 2.90. This, too, was statistically significant at the .01 level ($t = 3.12$, $df = 38$).

Discomfort Score

A final Rorschach measure used was a Discomfort Score derived by summing m , k and K scores. These are all signs of inner unrest or anxiety. For the purposes of this score, the favorable aspects of m , as contrasted with the disruptive meaning of K and k , were passed over in the interest of

detecting psychic disturbances that might benefit from the help the guidance service of colleges well equipped to deal with student problems. In individual diagnosis it is important to follow Monroe's suggestion (3) of relating the production of these variables to the total number of responses. In the present survey of group tendencies, this is made less necessary by the fact that long and short protocols occur with approximately proportional frequency in the student council and the psychiatric group.

The mean discomfort scores for the student council group is 3.33; for the psychiatric group, 4.95 and t is 3.1, significant at the .01 level of confidence. Calculation of the mean differences of the separate variables making up the discomfort score, m , K and k , fails to reveal any statistically significant result. This was true both for the comparisons of groups A and C and of the total council group with Group D. Only when the combination of m , K and k is employed does the difference rise to statistical significance.

Thematic Apperception Test

Work with the Thematic Apperception Test has thus far been limited to three variables of story content. They are (a) Direction of Thrust, in the sense of outward movement into the environment by the central character of the stories or impingement by the environment upon the character; (b) View of the World, which takes into account the subject's optimism and pessimism concerning the time and emotional climate within which his fantasy characters move or against which they pit themselves; and (c) nature of Outcome in the stories. Every story is scored on each of these variables on a three-step scale running from favorable to unfavorable. The Thrust Scale is scored Active, Indecisive, Passive. The View of the World Scale is scored Supportive, Neutral, Hostile, the Outcome Scale is scored Success, Indetermination,

Failure. Each student's behavior in each variable is added separately to yield a score showing the weighting he has earned in each.

The hypotheses to be tested were as follows: First, that students in good emotional health would alternate between outward thrust and passive reception of thrust, between perceiving the environment as supporting and hostile, between favorable and unfavorable outcome. These hypotheses were based on the notion that persons normally adjusted are able to perceive and accept the realities of experience. Here we also assume that both ends of the three continua will at some time be a part of the experience of all the subjects. A second hypothesis, advanced much more tentatively, was that the more normal emotional tones will express themselves in the stories by a higher frequency of active outward thrust than of passive receiving of thrust; by a higher frequency of optimistic than of pessimistic view of the world; by a higher frequency of favorable than of unfavorable outcome.

Because we do not have a satisfactory comparison group of protocols from the psychiatric referrals, the present analysis is limited to a study of the differences between the A and the C groups of the student council students.

The findings unequivocally support the first hypothesis. All the protocols of the student council thus far analyzed (forty in number) swing with apparent freedom between the two poles in all three variables. A comparison of the two extreme groups, A and C, shows the second hypothesis, or set of hypotheses, to be sound but by a much narrower margin.

For Direction of Thrust in Group A, 61 per cent of the subjects show a predominance of active over passive direction; 23 per cent show a heavier passive weighting. Sixteen per cent have equal frequency.

In Group C, 50 per cent show a predominance of active thrust; 50 per

TABLE II. Tests of Significance Between Group A and Group C in Direction of Thrust *

	A>P	P>A	Total
Group A.....	16	6	22
Group C.....	6	6	12
	22	12	34

Those giving equal frequency to the directions of thrust were not included in either cell.

Chi-square = 1.7 not significant

* In the table, A symbolizes active, outgoing thrust; P symbolizes passivity.

cent of passive. The difference between Group A and Group C yields a chi-square of 1.7, far too small to reach statistical significance at the .05 level of confidence.

In View of the World, Group A gave predominance to the supportive view in 50 per cent of the cases. Forty-six per cent more frequently presented the world as hostile while four per cent gave equal weight to each view. In Group C not a single student gave predominance to the supportive view; 83 per cent presented hostile and frustrating views predominantly. Sixteen per cent gave equal weight to each view. Because of the zero frequency in the supportive cell of the C group, when chi-square was calculated the ambi-equal frequencies were collapsed into the supportive cell in the case of both samples. This yields a chi-square of 4.79, significant beyond the .05 level of confidence.

In outcome, 73 per cent of Group A gave favorable outcomes more frequently than unfavorable; 27 per cent gave the reverse frequency. For Group C, 42 per cent more frequently gave favorable than unfavorable outcomes; 50 per cent presented unfavorable outcomes more frequently. Eight per cent are ambi-equal. The chi-square of 2.56 is not statistically significant ($p = .15$).

Thus the only one of these variables showing a statistically significant difference between Group A and Group C is that concerned with the individual's view of the world. However, the fact that the direction of all the

percentages is in line with the hypotheses encourages further experimentation with these variables. They do seem to be getting at genuine differences between the comfortable and effective personality and one that is somewhat less so. They have, moreover, the great virtue of simplicity, a badly needed innovation in TAT interpretation.

SUMMARY

This study of sixty-four normal college students supports the not surprising conclusion that some individuals who are making outstanding contributions to their communities and gaining deep satisfaction in the process achieve this with little stress and strain. Others pay a high price for similar adjustment.

The level of emotional health within the group under investigation is not significantly related to level of scholastic aptitude.

On the Rorschach the members of the so-called adjusted group on the whole met most of the criteria for normalcy set up in the literature, although these criteria were drawn up for a more heterogeneous group of young adults than that under survey here. These criteria include acceptance of the plates, productivity, production of M, relation of FC to CF+C, and the use of shading.

In the color and shading ratios and in their production of M, genuine differences were found between the council group and a comparison group of students referred to the college psychiatrist. In the Fc+FK:F ratio, the student council group far excelled the expected frequency in the use of Fc+FK. In this they differ markedly from the psychiatric group, which in disproportionate numbers weighted F more heavily than was expected in the Fc+FK:F ratio. The findings on the normal group might be explained away on the grounds that their F percentage is very low, if

it were not for the difference between council and non-council groups. Also, certain internal evidence, as well as known factors in the environment, suggest that the designated upper level for normal frequency of Fc+FK might well be raised. On the other hand, $\frac{1}{4}F$ appears to be a little too low a level of Fc+FK production for good adaptation in the setting of these small colleges.

Two new quantitative measures have been suggested, a Morbidity Score and a Discomfort Score. Both were found to differentiate to a level statistically significant between the student council and the psychiatric referral group.

Three variables were explored in the TAT protocols: Direction of Thrust, View of the World, and Outcome. Results of this analysis sustain the hypothesis concerning an alternation from one end of the variable range to the other. The analysis further indicates that the variable View of the World is handled differently by the best and the least well adjusted groups within the student councils. The difference is significant at the .05 level of confidence. The other two variables, Direction of Thrust and Outcome, show the expected trend, but the difference in groups does not reach sufficient magnitude to be statistically significant. Results so far obtained indicate the need to push the comparisons here begun to a study of protocols of students in psychiatric treatment.

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Psychological Study of a School Phobia in One of a Pair of Identical Twins¹

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This paper summarizes the psychological study of a pair of monozygotic twin girls. The purpose of the report is to: (1) describe how projective test material was used in analyzing the essential aspects of the conflict which motivated a school phobia, and (2) to lend some support to the hypotheses concerning the Sum C score on the Rorschach.

The twin girls were seen by the psychologist when they were 10 years, 10 months of age. The mother had requested psychological testing of Twin A because A had refused to go to school and was beginning to show a fear of other social situations, including parties and visits to relatives. In addition to Twin B, the only other sibling was a male infant less than one year of age at the time of testing.

Although Twin B apparently was showing no behavioral problems and was considered by the parents to be satisfactorily adjusted, the psychologist requested that Twin B also be examined. Both girls were doing very well scholastically and the mother reported no serious behavior difficulties with either girl prior to the development of A's refusal to go to school.

Both girls were very attractive and the mother had taken especial pride in their physical similarity. She insisted that they always wear identical clothes and often carried this issue to extremes. If one girl soiled her blouse both girls would have to change blouses immediately. Although the girls had often requested different clothes the mother refused to permit this.

Twin A had shown an increasing fear of school for three months prior

to psychological testing and refused to try to attend school for even part of the day. Her explanation for not attending was that the other children called her "cry baby" and she wanted to avoid this painful name calling experience. She offered no explanation for her refusal to go to parties or to relatives and stubbornly avoided these social situations. At the time of testing, A was having homebound instruction so that her school work would not suffer as a result of the prolonged absence.

Twin A was seen first and Twin B one week later. Each girl was given the Wechsler Intelligence Scale for Children, the Rorschach, the TAT and the Figure Drawing Test in one interview.

Behavior during the interview.

Twin A initially refused to leave her mother in the waiting room and began to cry. After considerable cajoling and bribing she left her mother and entered the testing room alone. Within ten minutes her behavior changed markedly. She became smiling, friendly and relaxed and showed no marked overt anxiety for the rest of the interview. Thus Twin A manifests considerable lability in affect and behavior. In addition, A's behavior during the interview was somewhat seductive and teasing in nature. She would initially resist answering a question but become cooperative under slight pressure from the examiner. She would offer a pun or silly answer to a question and then spontaneously correct this and respond with the correct answer.

On the basis of this type of behavior it appears that, with male adults, A has a strong need for recog-

¹ Thanks are due to Dr. Alvin Scodel for his critical reading of the manuscript.

nition and attention, and these teasing techniques apparently have been successful in eliciting responsiveness from adults in her environment. It is important to note that A's teasing behavior always stopped short of negativism and, although she strongly desired attention and responsiveness, she was careful not to behave in any way that would provoke rejection by the examiner.

Twin B, on the other hand, behaved in quite a different fashion. B entered the testing room willingly but was overtly quite anxious during the entire interview. She fingered her blouse nervously and was verbally less spontaneous than A. B's orientation toward the male examiner was marked by her desire to behave properly and her need to impress the examiner as a "good girl." She was always compliant and cooperative and seemed intent on avoiding punishment or chastisement by the examiner. Thus, while A was motivated by a need to elicit recognition and attention, B was more intent on avoiding punishment and impressing others with the fact that she was a "good girl."

Both girls talked repeatedly about their baby brother and agreed that their father was more strict than their mother. Both girls agreed that B was

smarter in school and that B stood a better chance of attracting a boy they both liked. Thus, as far as conscious aspects of self esteem are concerned, A apparently feels inferior in relation to B.

Intelligence test performance.

Table I summarizes the performance of the twins on the Wechsler Intelligence Scale for Children.

Performance on the Verbal Scale was quite similar for the two girls with no important differences on the sub-test scores. One question on the comprehension sub-test did suggest some personality differences. To the question "What should you do if you see a train approaching a broken track?" A replied, "I couldn't stop him." B's answer was "Stop it by making a loud noise." A's answer indicates feelings of helplessness and inadequacy in times of stress and a basically passive approach to environmental problems.

On the performance scale B was superior to A mainly because B's approach to the problems was more methodical and efficient and she gained bonus credits for quick solutions. A was quite impulsive and unreflective in her approach to the picture arrangement sub-test and worked with less planning and with more of a trial and error approach. Thus, A's problem solving behavior on the performance scale affirms the previous statement that feelings of helplessness are prepotent in a problem solving situation and these are apt to interfere with efficient problem solving behavior.

Although B was overtly more anxious than A, the former did not let anxiety interfere with her problem solving behavior and this suggests that B has learned methods of dealing with anxiety so that it does not always lead to disorganization of behavior. Although A showed less overt anxiety, the stress of the test situation did lead to impulsive and essentially maladaptive responses and A seems

TABLE I. Intelligence Test Performance of the Twins on the Wechsler Intelligence Scale for Children

	Twin A	Twin B
Verbal Scale IQ.....	100	103
Performance Scale IQ.....	103	129
Full Scale IQ.....	101	117
Verbal Sub-Tests.....	Weighted	Score
	Twin A	Twin B
Information.....	8	8
Comprehension.....	11	11
Arithmetic.....	10	10
Similarities.....	10	13
Vocabulary.....	11	10
Performance Sub-Tests..	Weighted	Score
	Twin A	Twin B
Picture Completion.....	10	13
Picture Arrangement.....	7	13
Block Design.....	13	17
Object Assembly.....	12	16
Coding.....	10	12

less able to control anxiety and prevent it from interfering with organized and adaptive behavior.

Rorschach protocols.

Table II summarizes the formal aspects of the Rorschach records of the twins.

TABLE II. Summary of Rorschach Responses of the Twins

	Twin A	Twin B
R.....	38	36
T.....	20'	19'
T.....	30"	30"
Average reaction time for achromatic cards.....	5.0"	3.8"
Average reaction time for chromatic cards.....	5.6"	6.0"
Total F \times 100.....	68	83
$\frac{R}{R}$	71	83
$\frac{FK + F + Fc}{R} \times 100$	26	36
P.....	4	5
O.....	0	0
(H + A) : (Hd + Ad).....	11.6	15.2
Sum C.....	7.0	1.5
M:Sum C.....	2:7.0	0:1.5
(Fm + m) : (FC + c + C').....	0:0	1:1
No. R to VIII, IX, X \times 100.....	34	33
$\frac{R}{R}$	8:2	6:0
W:M.....	21	17
W%.....	69	77
D%.....	8	3
Dd%.....	2	3
A.....	8	12
Ad.....	2	1
H.....	3	3
(H).....	0	1
Hd.....	4	1
Cl.....	5	1
Pl.....	0	4
N.....	9	0
Food.....	0	2
Arch.....	1	0
Geo.....	0	1
Fire.....	1	0
Obj.....	3	8
At.....	1	1
Art.....	1	1

The Rorschach protocols of the twins are quite similar with respect to formal characteristics like R, W%, D%, Dd%, F% and P. One of the most salient differences between the

twins lies in their different approach to the chromatic cards. Sum C is 7.0 for A and only 1.5 for B. Klopfer, et al (4) state that when CF and C responses outnumber FC reactions the individual is apt to have inadequate control of impulses and there will be a strong tendency to act out affective experiences.

During the intelligence testing B was able to prevent her anxiety from interfering with her performance and thus was able to control the disorganizing influence of anxiety. Twin A, on the other hand, cried in the waitingroom and during the intelligence testing was impulsive and unable to control disorganizing affect. Referring specifically to A's symptom, it is reasonable to assume that the phobic reaction to school reflects an inability to suppress anxiety related to a certain social situation and indicates a defect in the ability to prevent anxiety from flooding the ego.

With respect to content, A seemed preoccupied with articles of clothing, giving three "scarf" responses in addition to images of a "hat," "blouse," "slip" and "skirt." This concern with clothing might indicate preoccupation with her attractiveness as a female. It was mentioned previously that the mother of the twins made the clothing issue a major one in the home and the girls were always meticulously dressed with the proper balance and contrast of colors. The examiner felt that twin A was a bit more conscious of her appearance than twin B and was more careful in preventing creases and spots from spoiling her clothing. This behavior, together with her "teasing" attitude with the male examiner, suggests that A's behavior is, in part, influenced by a strong need to appear attractive to male figures so that she will be loved and accepted by them.

Twin B gave two food responses ("turkey bone" and "cookie") and tended to emphasize oral receptive symbolism in her images (e.g. "mouth of bird," "place where you put the

RORSCHACH PROTOCOL OF TWIN A

CARD I

3"

1. Eagle.

D F+ A

1. The wings and body.

2. Can I put it different ways? It may seem funny but it looks like a person if it had a body.

W, S F+ Hd

2. A person's face—the eyes, nose and hat—teeth here.

3. Looks like a mountain—no it is like a bridge going through here.

Dd, S F Arch.

3. Looks like a bridge.

CARD II

5"

1. Looks like a fire here.

D. C. Fire

1. Because it's red.

2. Looks like a hat here.

d. F+ Cl.

2. Looks like it.

3. Looks like a sky at night time.

D CF N

3. The colors all together.

4. Two thumbs.

D F+ Hd

4. Looks like it, the shape.

CARD III

8"

1. Looks like head of person.

d F+ Ad

1. No, more like the head of a duck.

2. Scarf.

D, F+ Cl.

2. The shape.

3. A person, mouth and nose and two eyes.

D F+ Hd

3. The mouth, the face only.

4. Tiny, tiny person smoking a cigar.

D M H

4. Up here—the cigar and face.

5. Looks like trees.

D F+ N

5. The trunk and leaves.

6. The whole picture looks like outdoor land—trees and mountains.

W, S FK N

6. It's wide and then the trees widen out at the beginning and as you go up it gets narrower.

CARD IV

10"

1. Eek! Feet.

D F+ Hd

1. The shape.

2. A way back person—a person leaning back.

D M H

2. The head and body here—arms.

3. Could be against the wall and use these for hangers.

D F+ Obj

3. What you hang your coat on.

CARD V

2"

1. A butterfly—the wings.

W F+ A P

1. The shape of it.

2. Needles.

D. F+ Obj

2. The shape.

CARD VI

8"

1. A star.
D F+ N
2. Water like here.
D C'F N
3. Two little needles.
d F+ Obj

1. This part—shaped like it.
2. A splash of water—the white in background.
3. The shape.

CARD VII

2"

1. A scarf.
D, F+ Cl.
2. A little dog or cat.
D F+ A
3. Looks like snow.
W C'F N
4. Head of an elephant.
D F+ Ad

1. It could be a tight belt.
2. Ears, face and nose.
3. A frozen piece of snow—it is odd shaped and white.
4. Trunk and face.

CARD VIII

2"

1. Looks like a skeleton.
D F+ At
2. Sky on different nights.
W CF N
3. Oh, a lion.
D, F+ A P
4. A design.
W CF Art
5. A scarf.
D FC Cl.

1. Bones like.
2. The blue and pink—sky is different colors.
3. The shape—legs and head.
4. Shape and color.
5. The shape—blue like.

CARD IX

10"

1. A big bfl'y.
W F+ A
2. Sky at night because of the different colors.
W CF N
3. A vest—a blouse.
D F+ Cl.
4. A slip—a person's head behind there.
D F—, FC' H

1. The wings.
2. The colors.
3. The shape.
4. I can't see the head—the slip is here and skirt here.

CARD X

3"

1. Two animals, worms.
D F+ A P
2. The sun.
D CF N
3. Bee.
D F+, A
4. Rabbit's face.
D F+ A P

1. The shape.
2. Looks like it—orange spots and yellow.
3. The shape.
4. Looks like it.

RORSCHACH PROTOCOL OF TWIN B

CARD I

4"

- | | |
|---|--------------------------------|
| 1. Some kind of bird.
D F+ A | 1. Head here—wings. |
| 2. Looks like one of the girls in my room.
She drops all black paint over her dress.
W C' Art | 2. I only see the black paint. |
| 3. A bat.
W F+ A P | 3. The whole thing—wings. |

CARD II

10"

- | | |
|---|---|
| 1. Two gorillas dancing under the sunlight.
W FM, CF A | 1. The sun because it's red—the head of the gorilla and body. |
| 2. Piece of cloth with a hole in it.
D, S F, Obj | 2. Here, the hole. |
| 3. Heads of people.
D F— Hd | 3. The hair, nose and mouth. |

CARD III

1"

- | | |
|---|---|
| 1. People.
D F+ H | 1. Legs, arms and head. |
| 2. Bow or bone.
D F+ Obj P | 2. Bow. |
| 3. Stick with a piece of cloth at the end.
D F Obj | 3. Here, the threads of the cloth are here. |
| 4. Branches.
D F+ Pl | 4. Look like it. |
| 5. Looks like a body here.
D F+ At. | 5. The chest, the ribs only. |
| 6. A crooked turkey bone.
D F Food | 6. The meat and the crooked bone, I had some yesterday. |

CARD IV

8"

- | | |
|--|---|
| 1. A bird, I never seen a bird like that, but it looks like that anyway.
W F+ A | 1. The body, head and wings—it has three wings. |
| 2. A stool.
D F+ Obj | 2. Looks like it. |
| 3. A flower.
d F+ Pl | 3. Shaped like it, roses like. |
| 4. A person with feet and arms.
W F+ H | 4. Head too. |
| 5. Looks like a stove—old fashioned one.
D F+ Obj | 5. Like in a stove—place where you put coal in. |

CARD V

1"

- | | |
|------------------------------|----------------------------|
| 1. Bat.
W F+ A P | 1. Wings, ears and head. |
| 2. Mouth of bird.
D F+ Ad | 2. Here—birds go caw, caw. |

CARD VI

5"

1. Lamp up there.
D F+ Obj
2. A cat when they get mad.
D Fm A
3. A shelf.
Dd F Obj

1. The shade—looks like it.
2. The hair comes out and stands outturned backwards—you can't see his face.
3. Put books here—they hold books up.

CARD VII

1"

1. Looke like a dog.
D F+ A
2. A mountain with a door to go in it.
D, F Geo

1. Chin—mouth—feet all together.
2. Shape of mountain—a round mountain—pieces of rock to go into.

CARD VIII

5"

1. Looks like animals.
D F+ A P
2. Looks like a butterfly.
D FC A
3. Top of lamp.
D F+ Obj
4. A sweater blouse with arms and neck.
D, F+ Cl

1. Crocodiles—feet and mouth.
2. Head—different colors on it.
3. The shape.
4. Shape of shoulder and neck.

CARD IX

12"

1. Looks like a person.
D F— H
2. Little statues.
D F+ (H)

1. A comic person—face—hat—head chest.
2. Looks like it—person—head, eyes.

CARD X

1"

1. Spiders.
D F+ A P
2. Insect.
D F+ A
3. Flowers.
D FC Pl
4. Cookie.
D, FC Food
5. Two animals.
D F+ A
6. Two petals on flower.
D F+ Pl

1. Looks like it.
2. Shape, ears, long wings, no body.
3. Stem and part where flowers come out.
4. The color.
5. Looks like it.
6. Here, the shape.

coal in"). It was previously stated that B seemed intent on pleasing the examiner and behaved toward him as if he were a potentially punishing parent figure. This type of overt behavior is compatible with projective responses suggesting strong dependency leanings, for strong dependency needs

would lead to a fear of displeasing the adults who gratify these dependent motives.

Thematic Apperception Test

The themes offered by the girls to selected TAT cards follow:

TAT OF TWIN A

1. What's that? An instrument—he is taking violin lessons—sitting there, he doesn't want to practice (why?) he doesn't like taking violin (going to do?) He is mad.

3GF. Looks like she's crying—(why?) Looks like her and her boyfriend had a fight (about what?) her boyfriend was going out with another girl.

4. She's talking to him—he is looking as if he's going away. He doesn't want to listen (what happens?) I don't know.

5. Mother comes in—pot and dresser—flowers in there—light is on—all is neat. She came home from vacation and the house is neat. The children made it neat.

6GF. Looks like she's sitting down and he just comes in and he sits and is saying something to her (what?) he says, "Get me some more tobacco for my pipe." (Does she?) Yes.

7GF. Mother talking to little girl—mother is reading her a story and the dolly is falling asleep (girl thinking?) I don't know.

8GF. She's wondering (about what?) Looking out window—waiting for someone to come home—(who?) her husband or her children.

9GF. Water, isn't it? By the water—she's looking at some one—at her—has a towel—they are both running—the tide's coming up (what's happening?) (A blocks on rest of plot)

10. He is kissing her—dancing (what else?) I don't know.

11. Is this a person? Dawn in some mountains—in water—rocks—looks like a plane shooting through the water—a person with a rope, holding on to that. (What happens?) I don't know.

12F. Looking at something—(What?) Don't know—maybe they're looking at TV. (thinking?) she looks like a skeleton.

14. Somebody in the dark—opening a window—looking at the stars (thinking?) Could I visit the stars.

15. Cemetery—he is praying (what happens?) Don't know.

18GF. Who's that? A girl—she's telling this person to go upstairs—looking at her face.

16. My brother—he's playing horseback and riding on a dog. The dog is running away and he falls off the dog. He gets up and walks away.

TAT OF TWIN B

1. Boy is . . . what's that? Looking at some thing and wondering what it is, what to do with it? Where he should put it?

2. She's carrying books . . . man's plowing gardens—other girl is watching him—see that

he does it right—see that the horse doesn't damage anything.

3GF. Girl is crying—got hand stuck in door—did something wrong and got sent to bedroom. She broke a glass—(who sent her to bed?) Father sent her upstairs—warned her not to do it again.

4. Girl telling . . . man not to fight—he'll get in trouble and get hurt.

5. Girl is coming in door—going to read a book—change flower water—fix flowers—fix bookcase (B fingers blouse in a nervous fashion).

6GF. Man is asking girl if supper is ready—asks if it is alright if he invites someone to dinner—(she says?) O.K.—but don't invite too many people.

7GF. Girl rocking doll—mother telling her—reading stories—girl listening—doll going to sleep—girl looking and wondering (about what?) I don't know.

8GF. That's a she, isn't it? She's wondering what to do next—she just washed the walls—waiting for them to dry—thinking (about what?) I don't know.

9GF. Girl watching other girl to see where she's going—see if she's doing things with her boyfriend (had she been?) Yes, she was (doing what?) . . . (What will girl do?) She's gonna warn her not to date her boyfriend.

10. Man's kissing girl good night—see her next night for a prom dance.

11. That an insect? It is—Insect's searching stones to hide behind against his enemy—wants place to hide without being crushed. (Does he find it?) Yes.

12F. Old lady telling girl not to go out with such a boy—he's not fit for her—she should do her work first and then comes her boyfriend (Who says that?) her mother.

13G. Girl—she's going upstairs—gonna go and see the machinery—see how it works—bottling milk—see how it's made, how it's done, cause they're studying it in school.

14. Dark out—boy's climbing—robbing—he knows the people struck it rich—gets a \$6,450 bond.

15. Man is in cemetery—praying for people that he knows that died. (Who?) I don't know.

16. Little boy playing with truck and other boy fighting—saying he wants the truck—one is ten and one is six (what happens?) small boy gets hurt—mother comes down and tells the big one to fight with people his own age—he is as mad as ever—both mothers have a fight.

18GF. Girl telling man . . . girl telling other girl that she better go to bed because she has a sore throat.

There are several important differences in the themes of the two girls. First, A shows an excessive concern with loss of love objects (see stories 3GF, 4, 5, 8GF). In 3GF the girl has lost her boyfriend; in 4 the man is leaving the woman; in 5 the mother has been away from the children and in 8GF the girl is waiting for a loved one to return.

This exaggerated concern with loss of love objects suggests that anxiety over loss of love and rejection is one of the motives for A's phobic reaction.

Bornstein (1) has described the onset of a school phobia in a four year old boy in which the fear of going to school was, in part, a result of a fear of being abandoned by the mother. In addition, in both Bornstein's case and the present one the birth of a sibling occurred several months prior to the onset of the symptom, and this event presumably exacerbated the anxiety over being rejected and abandoned.

Both girls' themes to card 16 strongly suggest hostile feeling to the younger brother and tend to support the assumption that his birth was a precipitating factor in the development of A's phobic behavior.

In addition, Twin A apparently perceives male figures as dominant over female figures. In story 4 the man does not want to listen to the woman and is going away and in 6GF the man asks the woman to get some tobacco for him.

B, on the other hand, perceives woman in a more positive light and as superior to men. In story 2 the woman is watching the man to see that he does the job correctly; in 4 the girl is giving orders to the man; in 6GF the man asks the woman for permission to bring home guests for dinner and in 12F the old woman tells the girl that a certain male is not "fit for her."

This difference in the perception of males and females indicates that B values the female role more than A and suggests that B has identified

more completely with the mother than A has. This statement is supported somewhat by the fact that B is more concerned with "right and wrong" (see stories 2, 3GF, 4) and with the culturally approved behaviors for a young female (see stories 5, 8GF, 18GF).

On a more tenuous level of analysis, the Rorschach content suggests that A perceives mainly male genital symbols while B perceives, predominantly female genital symbols. A's images included "two thumbs" on II, a "man smoking a cigar" on III, "needles" on V and VI, and "elephant's trunk" on VII and "worms" on X. B's responses included a "piece of cloth with a hole in it" on II, "a stove and a place where you put coal in" on IV and "a mountain with a door to go in it" on VII.

This difference in sexual imagery would support the previous suggestion that B has more completely identified with the female role while A seems to have overcathected masculine characteristics.

Final support for this hypothesis comes from the girls' drawings of a female figure. B's drawing overaccentuated the lips and breasts of the figure while A gave the figure very thin, tightly closed lips and drew only the face of the girl. When asked to complete the drawing A said she couldn't draw the rest of the person.

Discussion

A's concern with rejection and loss of love, her preoccupation with clothes, her perception of males as dominant to females and her overtly teasing manner with the male psychologist suggest the conflict that may have motivated her phobic reaction. It is suggested that A has strong unconscious impulses to obtain the attention and love of the father. These impulses elicit guilt and subsequent anxiety over possible rejection by the mother for these erotic motives. Thus, fear of abandonment and rejection elicit behavior intended to prevent A

from being separated from her mother. The avoidance of school therefore is motivated by a fear of being separated and abandoned. The generalization or spread of this avoidance reaction to other situations like parties and visits to relatives is probably based on the same fear; namely that A will be left alone and abandoned if she either leaves her home or her mother.

Both Fenichel (2) and Hall and Lindzey (3) emphasize the psychoanalytic hypothesis that fear of rejection and loss of love is a more decisive factor in producing anxiety in girls than in boys.

Because A's unconscious erotic impulses elicit guilt and anxiety over rejection there is much conflict over assuming the role of a female and unconscious anxiety related to female characteristics.

Twin B apparently has repressed erotic strivings toward the father with more success and thus there is less anxiety over identifying with the mother. The differences in Rorschach imagery and drawings of a female suggest that B has less anxiety over the acceptance of a female role and her TAT themes indicate a perception of the female's role as one of strength rather than of weakness.

Summary

The behavior and psychological test

data from a pair of monozygotic twins has been presented, one of whom had developed a rather severe phobic reaction to school and other social situations.

Analysis of the test material revealed that the twin with the phobia showed a less controlled reaction to color on the Rorschach, anxiety over a female identification and an excessive concern with loss of love objects.

It was concluded that the phobic reaction might have been motivated by a fear of being abandoned and rejected by the mother due to erotic strivings toward the father. The recent birth of a male sibling was assumed to be one of the events exacerbating the patient's fear of rejection and precipitating the development of the symptom.

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BOOK REVIEWS

R. M. Allen, *Elements of Rorschach Interpretation*. New York: International Universities Press, 1954.

The inflationary trend in Rorschach texts in recent years makes it difficult to be enthusiastic about another one, unless it has something unique to offer, either in a suggested approach, or in its integration of a large and often inconsistent experimental literature. To all intents and purposes, this book offers nothing new, and doesn't do as well as some of the recent revisions of Beck and Klopfer, or the new texts by Sarason, and Schafer. The present text is aimed at the very elementary level of interpretation, and does not include such old standbys as comments about cues in language (Rapaport et al), sequential analysis, problems of validation, relationship to other tests, clinical material, diagnostic categories or form level. This book is a sequel to the author's earlier text on scoring and administration of the Rorschach and is aimed to cover the second half of a one year course on the Rorschach.

The book is divided into five parts with the first three parts covering a theoretical introduction, and the inferences from the determinants and location scores. The fourth section of the book covers the interpretation of content, computational indices, inquiry and testing the limits. The fifth part covers three cases: the normal, neurotic, and psychotic; and a final section on writing clinical reports. Appended to the book is a valuable 1190-item bibliography on the Rorschach. None of the inferences from the scores are treated as hypotheses (as the new Klopfer or Phillips and Smith attempt to do) but the student is offered a series of additive, individual signs, each with its particular significance (M is — FC is —, etc.).

The author prefers an oversimplified, additive approach for the beginning student on pedagogical grounds, while the present reviewer would incline more towards approaches that stimulate and challenge the student rather than baby him. However, telling the student that sequential analysis is to appear in the next installment, and then leaning heavily on just such techniques in the case examples might confuse the beginner. Also the introduction of auxiliary data (not presented to the reader) in the test write-ups might prove equally confusing. On pragmatic grounds, too, the present reviewer

would question the desirability of deliberate omission of other clinical data, language cues, and nosological types that would be part of one's daily experience in any clinic setting.

Since Dr. Allen is an active contributor to Rorschach experimental literature, it was hoped to find a fairly critical treatment of the role of color, the nature of the evidence for various determinants, etc. Unfortunately in this text, the author abandons the critical role, choosing instead to rely on the clinical impression of usefulness of the Rorschach rather than on experimental data. In his theoretical discussions he was most disappointing for the present reviewer. His definition of perception is perhaps the clearest example of what the reviewer objects to. "Normal perception is a function of anxiety threat inherent in the field stimuli as he (the subject) sees them." (p. 18). The implication that the New Look in perception has dethroned the physical world, the role of light and the visual threshold or at least that such aspects become less important is strongly implied. Even in current psychoanalytic discussions one finds the admission of a conflict-free sphere of perceptual functioning. The perceptual styles suggested by the Klein group, for example, emerge when the role of physical characteristics such as lighting, time of exposure, (or formal definiteness) have been minimized. The philosophical, non-objective implications of Stern's statement that has so impressed Dr. Allen, "Keine Gestalt, ohne Gestalter" need not concern us here.

Despite these various objections, the book is easy to read, has a very valuable bibliography, and should readily acquaint the beginning student with some of the procedures of the clinical psychologist. For the more advanced student, this text is not a match for some of those currently available.

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Callewaert, H., *Graphologie et Physiologie de l'Écriture*. Louvain: Nauwelaerts, 1954. 168 pp. XXX pl. 90 Frb (\$1.80).

This well written book begins with some historical notes on the development of Western European forms of handwriting to dem-

onstrate the importance of cultural factors in the style of the handwriting in a particular period. A brief discussion of the most "rational" (i.e. natural) way of handwriting follows. In chapter 2 an interesting comparison is made between writing on the blackboard and writing on paper. Chapter 3 discusses briefly the gradual disappearance of superfluous movements and muscle tensions in the child who is learning to write. Decroly's concept of a constitutional awkwardness leading to difficulties in learning to write is related to Dupré's concept of lowered ability to control muscular relaxation ("paratonie"). Chapter 4 outlines briefly the neural pathways and muscular apparatus used in the writing act.

In chapter 5 this information is utilized in the formulation of an ideal mechanical model for a rational style of writing. Chapter 6 discusses several defective types of writing movements. Three positions of the writing tool in the hand are described in detail and typical illustrations are furnished of the appearance of handwriting produced by these types of position of the writing hand. In the next three chapters the effect on the handwriting of combinations and variations in these positions of the hand are discussed.

In the second part of the book the claims of graphology are considered. The author begins by disagreeing with the common idea that handwriting is to a considerable extent an expressive movement or gesture. In the next chapter it is argued that most of the qualities in the handwriting upon which Solange Pellat's four graphological laws are based are actually produced by variations in the position of the writing hand. The argument that, therefore, psychological interpretation of such qualities in the handwriting is bound to be fruitless does not seem to follow of necessity to this reviewer. After a brief review of some of the graphological interpretations proposed by Crépieux-Jamin for specific signs in the handwriting, Klages' system is criticized as are some ideas of Max Pulver and H. Hertz. In the last chapter Callewaert states his own position with regard to the possibility of finding characterological correlates of the various writing positions of the hand. He believes that the particular mode of writing chosen by the individual is largely determined by accidental factors and that personal adaptations of this mode are based on physiological factors (muscular and skeletal structure, etc.) alone.

While one can find little cause for quarrel in the emphasis on the primacy of neuromuscular mechanisms in the production of

writing, the main weakness of this approach lies in its complete neglect of the attitude of the writing individual toward his own production. The perceptual feedback from the progressing line being written, which guides the writing, particularly during the period when one learns to write, certainly leaves ample room for individuality. Imitation of the handwriting of parent, sibling, teacher, or friend or, on the other hand, deliberate efforts at producing a writing which is "different" have been frequently postulated as important factors in this process.

Callewaert further omits all consideration of experimental evidence of the kind collected by Saudek, Pophal, Steinwachs and others, which demonstrates the systematic effects of speed of writing, grip pressure and writing pressure, and which seems to implicate personality correlates. Summarizing, we might say that Callewaert presents valuable physiological information which will be shrugged off as irrelevant by graphological fanatics but which may help in the construction of an adequate theory of the writing act and its psychological meaning.

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Robles, Oswaldo. *Freud A Distancia.*
Balance Crítico de las Aportaciones
de Freud al Progreso de la Psicología.
Editorial Jus. México, 1955, pp. 267.

The author of *Freud A Distancia*, presents in this book ten lectures which he delivered on the 50th anniversary of the publication of one of Freud's most discussed work, "The Theory of Sex," in the Department of Psychology at the National University of Mexico.

Dr. Robles analyzes Freud's work in minute detail, referring freely and adequately to the extensive scientific literature that exists in different languages by Freud himself and by more than a hundred well-known authors. He exposes clearly the truths, uncertainties and fallacies in the doctrine and practice of psychoanalysis, and makes a profound study of Freud's attitude.

The author states that one of the dangers of Freudism consists in that not only a curative method of the neurosis is presented, but also a vast theoretic systematization that ambitiously includes a concept of the human personality, a philosophy of man and a philosophy of culture with methodological and ethical implications that a physician as such, in his own professional habitat, is not trained to cope with. He also points out that his

purpose is not to present a critique of the valid acquisitions of the psychoanalytic method as a therapy, nor to deny the genuine merits and the psychological genius of Sigmund Freud; his purpose is to show that along with the valid observations are found out-of-place phantasies, hypotheses that cannot be verified, errors of judgment, absurd philosophical theses and reasonings that violate logical principles.

In a comprehensive way, Robles describes the history of the various Freudian theories, pointing out Freud's contradictory points of view on the same topic. The author states the facts that led Jung and Adler to depart from Freud. Nevertheless, Freud created psychoanalysis and to a certain extent the new psychoanalysis, which is the original technique reviewed, censored, free of the primitive rigidity and that today is considered one of the best techniques for the understanding and investigation of human behavior.

It is not scientifically sound to assert that in order to be able to criticize Freud, it is necessary to become a Freudian. It is erroneous to consider that in order to be able to criticize Freud it is necessary to be analyzed, not only when the critique is related to clinical facts but also when it refers to the erroneous metaphysics used by Freud.

The author dedicates a chapter to Rudolf Allers and another to Karen Horney, showing carefully the contribution that both have made to the development of psychoanalysis. The author thinks that Allers exaggerates, because he rejects totally not only Freudism but also psychoanalysis. Robles states that it is necessary to recognize that Freudism and psychoanalysis are different: the psychoanalytic method is a technique in dynamic psychology, based on an adequate concept of personality and as such it is fruitful. Horney's contribution is very positive. He observes that Horney's work is well known in psychological circles in Latin America, especially in Mexico, where she usually spent her vacations, and that most of her books are translated into Spanish. He shows his great admiration for Horney, emphasizing the influence of her improvements in the practice of psychotherapy.

The book will provide the young clinician with a good reference on the somatic basis of Psychoanalytic Dynamics and on the practice of Psychoanalysis, topics which in the opinion of this reviewer are well presented and perfectly integrated. The study of the curative value of psychoanalysis, the innovations on the early Freudian technique and especially Robles' opinion about who should

practice psychoanalysis are well planned and of great value. Robles thinks that if we try to exclude from therapeutic practice psychotherapists who are not physicians, we limit the future possibilities of psychotherapy and that such exclusion is a consequence that has its roots in parochial biases. He suggests that for effective practice of psychotherapy "in genere" and especially psychoanalytic therapy, the training of psychologists should include mastery of neurophysiology and neuropathology.

In regard to didactic psychoanalysis Robles points out that it is convenient for those convinced of its efficacy, but that it is not absolutely necessary. He quotes Freud: "When we deal with a person who dreams frequently and is not too abnormal, self analysis with the assistance of dreams is enough"; this was the method that Freud used for himself. Freud did not allow himself to be analyzed because he did not think it was strictly necessary. Robles thinks that candidates who are "too abnormal" should not even try to become analysts. He thinks that even more important than didactic psychoanalysis is the practice of controlled clinical work, when the candidate is a scientist with ethical principles; that is, a candidate should have supervised psychotherapy besides theoretical training. This reviewer believes that this is a crucial issue in the training of psychologists; those who would like to practice psychoanalytic psychotherapy should be required to have a personal psychoanalysis besides the other training that Robles suggests. In Latin America we do not have psychoanalytic training for psychologists, although there are centers in Mexico, Brazil and Argentina where this training is offered to physicians. It is hoped that such training will be available in the near future for our psychologists who would like to engage in intensive psychotherapy.

The development of clinical psychology was greatly influenced by Dilthey, Spranger and Freud. Robles believes that Freud is the creator of clinical psychology. This reviewer does not have knowledge of any other book in Spanish that discusses the TAT technique with such clarity and precision. The author describes the test and states that in order to be able to interpret it, knowledge of dynamic principles originated by Freud is very necessary. Robles considers the TAT as useful to the clinician as the Rorschach, pointing out that both projective techniques are complementary. He believes that in a remote way Freud was one of the inspirers of the TAT.

Dr. Robles is a philosopher and a psy-

chologist. He is the author of several articles and nine books published in Spanish and one in English: "The Main Problems of Philosophy," Bruce Publishing Co., Milwaukee, Wisc., 1946. In Mexico City he is well known for his work in philosophy and psychology in the Spanish speaking countries. He teaches several subjects in psychology and philosophy at the National University in Mexico, and is considered one of the greatest psychologists in Latin America. In the last two chapters of the book reviewed here, Robles considers that Freud is one of the greatest psychologists who have ever lived, but he does not consider him a philosopher. He believes that Freud (whose erudition in philosophy did not go beyond Nietzsche, Schopenhauer and Fechner) did not have sound philosophical training and this is "what led him to confuse one order of things with another order of things . . ." Such procedure is not valid in science. " . . . this makes of Freudism a philosophy for those who do not have a philosophy, but not for

genuine philosophers." Nevertheless, Freud is an investigator who has a place of honor in the history of psychology and particularly in psychiatry and psychotherapy.

No doubt, the book is unique in the Spanish language. The Introduction to the book was written by Dr. Honorio Delgado, professor of Psychiatry at the University of San Marcos (Lima, Peru), and who was, according to Freud, one of the first to introduce psychoanalytical principles in Latin America. The book is valuable, not only to psychologists and psychiatrists, but is also stimulating to all those who through their professional contact have an extensive knowledge of Freud's work. It raises many interesting questions, some of which have philosophical implications and are analyzed from a philosopher's point of view.

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GENERAL NEWSLETTER

Slocker, Luis P. Aspectos psicomaticas de la retroversion uterina. *Rev. de Psicol. general y aplic.*, 1954, 32, 597-603.

A summary of findings regarding personality factors in 48 cases of uterine retroversion as revealed by the Rorschach and TAT.

Pertejo, J. El diagnostico de la introversion a traves del Test de Rorschach y del Cuestionario "STDCR" de Guilford. *Rev. de Psicol. general y aplic.*, 1954, 32, 605-610.

A comparison of Rorschach and STDCR measures of introversion.

Pichot, P. and Cardinet, J. Les profils, les patterns et les tendances dans le Test de Frustration de Rosenzweig standardization et étallonage Français. *Rev. de Psychol. appliquée*, 1955, 5, 127-142.

Normative data on a French sample for the Rosenzweig Picture-Frustration Study.

Quintela, Gloria F. Psicodiagnostico de Rorschach. *Arquiv. Brasil. de Psicotecn.*, 1955, 17, 7-28, 75-112.

A statistical summary of location, F+ and F- responses to the Rorschach of 200 male and 100 female Brazilian counselling clients.

Lárez, Belarmino A. Os Indios Guaranos através do psicodiagnostico Miocinético do Dr. Mira y Lopez. *Arquiv. Brasil. de Psicotecn.*, 1955, 7, 29-39.

Mira's Myokinetic technique was employed to study the personality characteristics of a small sample of Guarano Indians.

Ferracuti, F. and Rizzo, G. B. Psychological patterns in terminal cancer cases. *Educ. and Psychol.*, 1955, 2, 27-36 (Delhi).

A summary of the literature and projective data from a sample of 25 male and 25 female terminal cancer patients. Tests used were the Rorschach, TAT, Rosenzweig P-F, and human figure drawings.

Luthra, B. R. Personality study of recidivists in Uttar Pradesh. *J. cor-*

rectional Work, 1955, 2, 59-71 (Lucknow).

A sample of criminal recidivists revealed several significant Rorschach findings.

Heiss, R.; Honsberg, I.; and Karl, H. Vorläufige Mitteilung über die Verwendung von "Hässlichen Pyramiden" im Farbpyramidentest. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 106-124.

The Color Pyramid Test was expanded by requesting the construction of unpleasant as well as pleasant pyramids.

Neumann-Kern, V. Lügentendenzen und ihre Beziehung zu den neurotischen Tendenzen im Maudsley-Persönlichkeitsfragebogen bei weiblichen Jugendlichen. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 124-14.

A study and comparison of lie scores and neurotic tendencies among adolescent girls as measured by the Color Pyramid Test and the Maudsley Medical Questionnaire.

Lossen, H. Die Bedeutung der Verlaufsanalyse für den Wartegg-Zeichentest. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 142-154.

An investigation of the role of stimulus sequence in performance on the Wartegg drawing test.

Schneider, Rorschachversuche mit Mörden. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 154-169.

Rorschachs of 18 murderers were examined to ascertain the reasons for selection of murder as a resolution of psychological conflict.

Newman, R. E. The application of the Rorschach technique to a primitive group. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 187-222.

On the basis of Rorschachs administered to 18 Otomi Indians in Mexico, attempts were made to delineate a "basic personality structure" of the group. Methodologic considerations, particularly the meaning of

Rorschach variables in relation to cultural context, are stressed.

Rickers-Ovsiankina, Maria A. Prognostic Rorschach indices in schizophrenia. *Zeitschr. f. diagnost. Psychol. u. Persönlichkeitsforsch.*, 1955, 3, 254-264.

Rorschach data indicative of affect, anxiety, and a struggle were found to be associated with improvement in schizophrenia.

Brachfeld, F. Oliver. El "Fatoanalis" de Szondi y la criminología. *Archivos de Criminol. Neuro-Psiquiatria y Disciplinas Conexas*, 1955, 3, 457-467. (Quito)

A critical discussion of the nature of criminality in relation to the Szondi.

Barra, Elza. O psicólogo a serviço da clínica criminológica. *Jorn. Brasileiro de Psiquiatria*, 1955, 4, 310-317.

Discussion of the values in criminology of the utilization of Rorschach, TAT, Szondi, and Myokinetic methods.

Wiegiersma, S. Die Versager im Behn - Rorschach - Formdeutversuch. *Zeitschr. f. diagnostische Psychologie*

u. Persönlichkeitsforsch., 1955, 3, 281-317.

Behn-Rorschach and Rorschach are compared and research data presented, demonstrating relationships between card rejection, lack of fantasy, and anxiety.

Biermann, Gerd. Geständnis und Wiederholungszwang im Sceno-Test. *Zeitschr. f. diagnostische Psychologie u. Persönlichkeitsforsch.*, 1955, 3, 317-331.

Describes the use of the Sceno Toy Test in child analysis.

Zulliger, Hans. Warum stiehlt Yolanda? *Zeitschr. f. diagnostische Psychologie u. Persönlichkeitsforsch.*, 1955, 3, 344-359.

A case study with the Tafeln-Z Test, Rorschach, and Tree Test of a 16-year-old girl thief.

Endara, Julio. Psychodiagnostic de Rorschach. *Zeitschr. f. diagnostische Psychologie u. Persönlichkeitsforsch.*, 1955, 3, 371-374.

Findings in Rorschach performance of delinquents, various ethnic groups, and organics in Ecuador.

ANNOUNCEMENTS

MINUTES OF THE EXECUTIVE BOARD of the Society for Projective Techniques and Rorschach Institute, Inc.

August 31, 1955, at San Francisco

The Executive Board met as scheduled and reviewed the affairs of the past year. The reports of the various committees and the Board action upon them are herein reported in the following order:

1. Membership Committee
2. Regional Affairs Committee
3. Editorial Committee
4. International Committee
5. Treasurer's Report
6. Ad Hoc Committee on Affiliate Membership
7. Committee on Ethics
8. Committee on Training
9. Committee on Program
10. Committee on Nominations
11. Appointment of Committees for Coming Year
12. Committee on Public Relations
13. Arrangements Committee
14. Research Committee
15. Comments by the President regarding Committee Structure, Autonomy and Central Direction

1. *Membership Committee*

(1) The Society elects new members twice a year. Applications are reviewed by the Membership Committee and appropriate action is recom-

of 85 new applications was received and reviewed. This number does not include those applications which did not satisfy face requirements. These 85 applications were distributed as follows:

21 for Fellow, 5 of whom applied under the new Bylaw which removed the requirement of prior Associate membership.

50 for Associate, 3 of whom were Student Affiliates.

14 for Student Affiliate.

0 for Affiliate.

The detailed volume of work is distributed as shown in table below.

Thus, from the total of 99 applications under consideration during the year, 59 new members were added, in addition to 17 who changed their level of membership.

(2) The Board of Trustees approved the applications for membership of 10 Fellows, 23 Associates, and 6 Student Affiliates. The candidates so endorsed are as follows:

Fellows:

Dr. Leonard Eron*
 Dr. Austin Foster
 Dr. Robert G. Gibby
 Dr. Ethelyn H. Klatskin
 Dr. Harold Michal-Smith*
 Dr. Rose Palm*
 Dr. Helen F. Peixotto*
 Dr. Sidney Rappaport
 Dr. Earl S. Taulbee
 Dr. J. John Vaccaro

	F	Asso.	Stu. Aff.	Aff.
Applications pending from previous year.....	1	9	2	0
Applications received during year.....	21	50	14	0
Total to be accounted for—99.....	22	59	16	2
Applications disposed of during year:				
Accepted				
Rejected	19	46	11	0
Deferred	0	0	2	1
Inactivated	0	0	0	0
Applications now pending	3	3	1	1
		10	2	0

mended to the Board of Trustees at their two meetings of the year. A total

* Direct election as Fellow; not previously an Associate.

Associates:

Dr. Jules C. Abrams
 Dr. William A. Alexander
 Mr. Alexander Antwarg
 Mrs. Claire Hudesman Brody
 Mr. Thomas W. Chu
 Mr. William Crain
 Mr. Abraham Klein
 Lt. Alvin Mahrer
 Dr. Christine Miller
 Mrs. Dorothee Mindlin
 Dr. William J. Reiss
 Miss Anna Rosen
 Dr. Evelyn Crumpton
 Dr. John A. Davis
 Dr. Harold J. Fine
 Mr. William Greenstadt
 Mr. Philip Himelstein
 Dr. Martin Jacobs
 Dr. Margaret Scales
 Mr. Sam Scher
 Dr. Frances Smith
 Dr. Rita Wertheimer
 Dr. Guido Wilde

Student Affiliates:

Miss Crusa Adelman
 Mrs. Betty Eisner
 Mr. Charles Gaston
 Mr. Joseph F. Mazurkiewicz
 Mr. Robert Rosenthal
 Miss Roberta F. Watkins

(3) The Board arrived at a clarification of the policy governing the endorsement of Student Affiliates. Such applicants must be graduate students in *clinical* psychology, and their status as such should be verified in all cases by contacting the departments in which they are enrolled. In those universities where there are no identifiable clinical sections, then the clinical professor at the relevant institution should be asked to certify to the student's status as a clinical trainee. In all cases of applications for Student Affiliate membership, a certification of the student's status and objectives should be obtained from the training institution.

(4) The requirements for membership as Affiliate were discussed by the Board. It was decided to modify the statement of requirements to read as follows:

Affiliate, for which requirements are:

- A. The professional degree appropriate to the applicant's field.
- B. Two years of experience in his professional field.

An affiliate shall be a person who has demonstrated a sincere and legitimate interest in projective techniques. In addition, he should be a person of special training in one of the various branches of the behavioral sciences and whose professional efforts are related to those of the Society. Such persons as educators, sociologists, anthropologists, etc., who have had special experience relevant to projective techniques, would be considered appropriate persons to apply for Affiliate status.

2. Regional Affairs

(1) The Board of Trustees voted to approve the establishment of a Southwestern Division.

(2) As a matter of general recruitment policy, the Board voted to send the sheet entitled "Information to Applicants for Membership" to all members of APA Division 12. The purpose here is simply to call the Society to the attention of those persons who might be legitimately interested in it and to facilitate their joining if they are so inclined.

(3) The question of sponsorship for applicants for membership in regions where there are few members was discussed at length. On a temporary basis, the Board favored an elastic interpretation of regulations, permitting sponsorship by any qualified members of the Society who have a recent and adequate acquaintance with the applicant's training, experience, and functioning. Steps must be taken soon to break the vicious circles obtaining in some areas of the country where a lack of members means that new applicants cannot be sponsored, which further insures a lack of a growing membership. Since this state of affairs cuts off from membership people who might be genuinely and

legitimately interested in the Society, it deserves continued attention.

3. *Report of the Editorial Committee*

This report, following that of last year, covers the calendar year 1954 in order to provide a complete summary of disposition of manuscripts and publication by volume in conformity with the procedure of the APA Council of Editors. This is an appendix to the attached report made early this year to the Council.

The most noteworthy event during the year was Mortimer Meyer's resignation as Executive Editor, a loss felt strongly by members of the Editorial Committee. Fortunately, Dr. Meyer consented to serve on the Advisory Committee and has made available to the Editors his invaluable experience and good judgment.

Increased circulation necessitated an increase from 1900 to 2000 copies for the March 1955 issue and another increase to 2100 for the June issue. While the cost per page has increased, the cost per copy has lessened and the proportion of profit to the Society for each additional subscription has increased. Approximately 1750 copies are mailed out and 350 are in reserve for back sales.

This year a series of five papers was solicited to commemorate Jung's 80th birthday and was published in the September 1955 issue. Some reprints of the series are available for sale. Plans are in progress for an issue during 1956 to commemorate the centennial of Freud's birth with emphasis on rapprochements between psychoanalytic theory and projective methods.

Data on disposition of 1954 manuscripts are now presumably complete.

Of 81 papers received 45 were rejected (55.6%), 27 published (17 in original form and 10 after revision), and 9 remain to be published. During 1955 we have received 55 manuscripts thus far. Of these 20 have been accepted, 25 rejected, and 9 not yet completed editorially.

During the past five years the Journal has been fairly constant in terms of number of pages, but utilization of space has undergone considerable change. As a result of increased printing costs the number of pages has been decreased somewhat over the last few years. At the same time, there has been a steady rise in the number of published contributions. There are two major reasons for this. First, our editors have devoted much attention during their assessment of manuscripts to possibilities of condensation with the result that the mean article length has progressively declined from 13.6 pages in 1950 to 8.5 pages in 1953 and 1954. The effective limit in abbreviation has probably now been reached. In addition, our printer has on his own initiative found space-saving methods. For example the first issue in 1955 will increase in page printing cost by 6.2% (number of pages held constant) or by 8.6% with the 100 copy increase in publication. On the other hand, a slight decrease in the size of the margins adds approximately 18% to the amount of text per page. Condensations in format alone of business material for the Society in one issue will save enough space for one or two more articles.

Thus, with 60 fewer pages since 1951, the Journal last year increased the number of published articles from 38 to 53, a 39.4% increase of pay dirt. While there are many society an-

	Content				
	1950	1951	1952	1953	1954
Total pages (incl. cover).....	520	596	558	528	536
Articles and case studies.....	29 395	38 459	35 450	50 427	53 449
Book reviews	9 23	7 19	6 11	15 30	9 16
Proportion of space for articles.....	76.0	77.0	80.6	80.9	83.8
Mean number of pages per article.....	13.6	12.1	12.9	8.5	8.5

	Disposition of Manuscripts				
	1950	1951	1952	1953	1954
Accepted in original form.....	28	25	28	34	20
Accepted after revision.....	15	18	6	19	16
Rejected in original form.....	17	16	20	24	33
Rejected after revision.....	0	0	3	1	2
Revision not received.....	2	8	6	11	10
Total received.....	62	67	63	89	81
Rejection rate.....	30.6%	35.8%	46.0%	40.4%	55.6%

nouncements including a directory of membership to be published annually, the proportion of space devoted to original material has risen from 76% in 1950 to 83.8% in 1954. It is anticipated that during 1955 this proportion will rise somewhat higher.

There has been a modest rise in the number of manuscripts submitted and a greater rise in the proportion of outright rejection of manuscripts. There is considerable labor required of editors in delineating necessary changes. We have been forced to forego specific suggestions for rewriting when such changes were too extensive. At the present time a manuscript must be almost acceptable in its original form or require changes of the order of condensation or expansion of sections to warrant return for revision.

4. International Committee

The Board discussed various issues dealing with the International Committee. It was felt that, with respect to our relations to the *International Society of the Rorschach and other Projective Techniques*, we should take no specific action to affiliate ourselves formally with that body. However, such informal action as is consistent with our present policies would seem to be a sound way of encouraging international cooperation. Specifically, we might want to publish the membership requirements of the International Society, encouraging individual members of our Society to apply for membership should they choose. In addition, we might point out the availability of the *Journal Rorschachiana* and encourage indi-

vidual subscriptions.

The International Committee has received a number of requests from foreign psychologists inquiring whether or not a foreign society may seek membership, as a single body, in the Society. It was felt that these special local groups should be handled as Regional Groups and referred to the Regional Committee. The International Committee will cooperate in every way possible with the Regional Committee in this respect.

The Hackbusch Memorial has been referred to the International Committee. This Committee, with the special addition of Grace Cox will supervise the gift subscriptions provided to foreign institutions under this Memorial. It has been the plan of the Memorial to provide gift subscriptions of the *Journal* to foreign institutions, not individuals, and the following principles have been, and will continue to be, the guidelines for the operation of the plan:

Journal subscriptions should be sent to institutions on the basis of: (1) locations where the maximum possible number of psychologists would benefit; (2) institutions providing the widest possible geographical distribution; and (3) institutions who themselves evaluate their own need as great.

At present the list of institutions to whom the *Journal* is sent on this basis numbers 15. These have been selected on the above principles with the aid of UNESCO. New requests coming directly to the Society will be cleared with UNESCO for general appropriateness and gifts sent within the limits of funds in the Memorial.

5. *Treasurer's Report for 1954*

Balance on deposit, December 31, 1953 (from bank deposit for December 31).....	\$ 4,476.68
Deduct bills applicable to 1953 but paid in 1954.....	405.50
Balance December 31, 1953, after provision for unpaid 1954 bills.....	\$ 4,071.18
Receipts 1954 including advance payments received for 1954.....	15,590.49
Total cash to be accounted for.....	\$19,661.67
Disbursements 1953	\$15,393.31*
Deduct bills applicable to 1953 but paid in 1954.....	405.50
Balance December 31, 1954.....	\$ 4,673.86
Deduct bills applicable to 1954 but paid in 1955.....	204.00
Balance December 31, 1954, after provision for remaining 1954 bills.....	\$ 4,469.86
Add balance of petty cash for 1954 as per attached statement.....	16.32
Balance including remaining petty cash.....	\$ 4,486.18
Add Journal balance for 1954 as per attached statement.....	530.04
Net balance December 31, 1954.....	\$ 5,016.22
Deduct advance payments received in 1954.....	2,564.21
Net balance, December 31, 1954 after deduction of advance payments.....	\$ 2,452.01

Receipts are summarized as follows:

Dues:

Fellow current	\$1,090.25
Fellow back	40.00
Fellow advance	50.00
Member current	3,668.90
Member back	153.50
Member advance	833.00

\$ 5,835.65

Subscriptions:

Current	\$4,355.15
Back volumes and single issues.....	627.97
Advance 1945	1,681.21
Monographs	49.20
Miscellaneous (Gregor, Jan, Prog.).....	3,007.12*
Bank credits	\$ 9,720.65
	34.19
	* \$15,590.49

Disbursements are summarized as follows:

Secretarial	\$2,331.00
Stationery, supplies, postage, etc.....	72.58
Printing	8,567.50
Travel	425.94
Petty cash including cash on hand (account attached).....	500.00
Mimeographing	118.88
Bank debits	58.93
Miscellaneous	3,318.48*

* \$15,393.31

* Includes the \$2,932.72 transaction in which this amount of money was drawn from the Jamaica Bank to close the account there and was deposited in the Bank of Manhattan.

6. Report of Ad Hoc Committee on Affiliate Membership

The Committee recommends that the category of affiliate membership be retained. It is quite possible that a number of research workers, artists and others could have legitimate interests in projective techniques quite aside from their use in clinical situations under conditions of professional responsibility. It is to the advantage of the Society to provide such people with a kind of institutional home and with an organization through which their interests can be circulated and developed.

It should be made extremely clear that affiliate membership is completely divorced from any conception of endorsement with respect to clinical competence in the use of projective techniques. (In all probability this principle should be maintained at all levels of membership. Professional competence, especially in the clinical sense, should best be left to the professions involved and their own certifying machinery.)

The Committee was unable to resolve the issue of whether a by-laws change is necessary or whether a clarification of policy will most effectively settle the questions clustered around the affiliate category of membership. One notion is that the present by-laws (Art. II, Section 3) covers the situation by stipulating that applicants for affiliate membership must "have a sincere and legitimate interest in projective techniques." A somewhat different view is that the by-laws should be amended to read somewhat like the following:

Affiliate members shall be persons other than psychologists and psychiatrists who have legitimate and sincere interests in projective techniques. A major criterion of legitimacy and sincerity is assurances that the use of projective devices by such persons is in full keeping with the principles of the Society's Code of Ethics.

This formulation would require the Membership Committee in every case to determine whether or not non-clinicians are genuinely interested in some intellectual problem relative to projective techniques or whether they have hidden clinical aspirations that are inappropriate to their background of training.

A further question might be raised about the stipulations in the present by-laws to the effect that affiliates must possess a Bachelor's degree and have at least two years of experience in their particular professional fields. Such requirements may serve as effective screening devices and be worthwhile in this sense. It may be debated as to whether they really provide standards in terms of which the sincerity and legitimacy of an applicant's interest in projective techniques can be trusted. This point is particularly applicable to such persons as artists and others in fields where formal educational requirements are not particularly high, although training requirements may be quite extensive. For such professions as anthropology and sociology, an A.B. degree is obviously too low a standard educationally, and it is hard to see why two years of experience should be required in a fresh Ph.D. in, say, anthropology whose interests are quite "sincere" and "legitimate" even though they were developed only in the course of his graduate training.

7. Committee on Ethics

Shoben presented the report of the Committee on Ethics which was accepted by the Board. Klopfer inquired whether in the APA code of ethics, which was recommended for adoption on a permanent basis by the Society, standards regarding diagnostic services were equally applicable to SPT. Shoben stated that this section deals not with ethical matters but criteria of usability in the application of any test to any kind of problem. Derner who teaches the code in a course on ethics assured the Board the APA

code adequately applies in its coverage so that SPT needn't add, change, or delete. The Board voted to present the code to the membership for adoption on a permanent basis.

There was considerable discussion regarding the processing of complaints. It was suggested that a report should be made to the membership on the successful handling of recent complaints. Objection was voiced to the idea of maintaining secret files on people, especially when names of people complained about who refused to cooperate with the Ethics Committee of SPT would be sent to the Ethics Committee of the APA without an accompanying statement of facts other than that these are people about whom unresolved complaints had been received. Shoben emphasized the "corrective attitude" of the Ethics Committee in those instances where ignorance or enthusiasm rather than evil intent were the basis of the complaints. If a person against whom a complaint has been received accepts the decision of the SPT committee, then the matter is settled. But if he refuses to recognize the jurisdiction of the SPT Ethics Committee, the APA is then notified.

There was further discussion regarding the question of jurisdiction of the SPT in such matters. Is there an implication of guilt if a man defies or questions this jurisdiction? Does the SPT have a right to investigate non-members? Defiance of SPT jurisdiction is the basis of putting a man's name on the list. What are the relative merits of public interest versus violation of private rights? Isn't the sending of a man's name to APA blacklisting procedure?

There was discussion on the principle of intercommunication on ethical matters among professional organizations. The reasons were detailed why content of charges cannot be communicated: first, because of considerations of confidentiality;

and second, because of liability to libel charges.

Just as it is the responsibility of any member of APA to report suspect or unethical practices, so it is of the SPT Ethics Committee to report to APA. All we pass on is that the person accused or complained about refused investigation by the SPT Ethics Committee and therefore prevented determination of the accusation, thus defying the committee. All that would be reported to APA are the facts: first, the individual's name; second, that he refused to acknowledge authority of the SPT committee; third, the names of the principals involved.

Shoben then related an example of questionable standards of practice and qualifications of people practicing clinical psychology. The appropriate APA committee has been apprised of this matter on an informal oral basis by the chairman of the Ethics Committee. The Board approved disposition of this matter to the APA.

8. *Committee on Training*

Kass reported on the activities of the Committee on Training which consisted essentially in orienting himself as chairman of this new committee to its functions and relationships to other committees of the society. During the past year the Committee on Training collaborated with the Committee on Ethics in the matter of a complaint received regarding inadequate standards of training and practice, disposition of which is reported in the Ethics Committee report.

A survey of training in projective technique offered in clinical psychology programs approved by the APA Education and Training Board was proposed and approved by the Board of the SPT. This survey will attempt to determine what training is currently being offered in these centers in projective techniques, the qualifications of teachers of projective techniques, how much experience in pro-

jective techniques is required before students are regarded as qualified, and as a result to establish standards of qualifications in projective techniques for practice, research, and teaching. The Board felt that such survey would be a service to the profession and might also be the basis of recommendations for standards to training centers. The survey would not attempt evaluation or accreditation of any of the training centers at this time, but would simply be an informational service.

A suggested source of information on what is being taught in projective techniques are the teachers now members of SPT. It was agreed that it would be idealistic and unrealistic to attempt to set up approved qualifications for teachers of projective techniques at this time. However, this may eventuate after a normative survey preparatory to setting up such standards. There was some discussion whether to include clinics and hospitals, whether to also study standards of supervision. It was the consensus of the Board that just as clinical psychology practice should take place only on the graduate level, so should practice of projective techniques occur only on the graduate level and in clinical contexts. One Board member mentioned the standard at his university of one full year of graduate credit and acceptance into the training program of the university before a graduate student is eligible to begin training in projective techniques.

Since the APA Education and Training Board has already accumulated data on curricula in some 50 universities, it was suggested that the Committee on Training secure information on projective technique courses and psychologists teaching them from this source, (Victor Raimy and the Practicum Evaluation Committee of the APA). Kass announced that M. Erik Wright, M.D., Ph.D., Director of Clinical Services at the University of Kansas has accepted re-

sponsibility for heading up this survey. The Board expressed appreciation for the start the Committee on Training has made.

9. Committee on Program

Holzberg reported for this committee and discussed problems of program relationship and integration with APA, outlining the pros and cons of (a) joint responsibility for program, as this year, or (b) separate programs, as last year. There was further discussion of the problems of getting the Society's symposia into the APA program when these are co-sponsored with Division 12. Last year the Society also had successful workshops. It was concluded that the matter of joint sponsorship with APA be left to the discretion of the current program chairman from year to year.

10. Committee on Nominations

Kutash described how the Committee on Nominations and the Board of Trustees were canvassed for suggested nominations. The names were rank-ordered until two acceptances were received. There were two nominees for each position except that of editor of the Journal, since the latter position is unique in its requirement of continuity. There was also space for write-in votes. Of 678 ballots, 321 were returned. There had been several protests about one name nominations. It was decided that this matter be placed on the agenda of the membership meeting. It was suggested that the editor and executive editor of the Journal be appointive rather than elective. These jobs require special ability and should not be on the basis of a "popularity contest." Similar thoughts were expressed about the position of treasurer. It was also suggested that the duration of office for the editors and treasurer be extended.

Results of the elections were announced as follows: Bruno Klopfer, president elect; Gordon F. Derner, treasurer, re-elected; William E. Hen-

ry, representative at large, re-elected; Bertram R. Forer, executive editor, incumbent named to fill unexpired term of Mortimer Meyer who resigned, re-elected. Elections next year will be held for (1) president elect, (2) eastern representative at large, (3) secretary. There was some discussion of the principles of rotation of one-third of the members of standing committees, the appointments to which are for three years.

11. *Appointment of Committees for the Coming Year*

The Board discussed problems of setting up committees and appointments to committees in accordance with the rules regarding rotation of members and staggered expiration of appointments.

12. *Committee on Public Relations*

Kutash described the background of events which led to the setting up of this committee. In the absence of the chairman, action on the report of this committee was deferred.

13. *Arrangements Committee*

A vote of appreciation was extended to Dr. M. H. Elliot for his devoted hard work in the successful preparation of facilities for the annual meeting of the Board and the Society.

14. *Research Committee*

The Board reviewed exchange of correspondence between Piotrowski and Beck regarding Piotrowski's proposal to establish two permanent panels under the joint auspices of the American Orthopsychiatric Association and the Society; (1) Psychoanalysis and Psychological Tests; (2) Rorschach Technique, its strength and weaknesses. This was discussed by Beck who dealt with the proposal as president of SPT and co-chairman of the AOA research committee. Beck supported both panels, pointing out that psychoanalytic concepts are frequently misunderstood and misapplied in psychological test

reports; Rorschach technique is often misapplied by improperly prepared people, for example, when used for selection purposes. In his reply to Piotrowski, Beck suggested that membership on the panels be limited to a specified number of years and that members should be appointed on a rotating rather than permanent basis. Beck appointed a committee of Piotrowski, Holzberg, and Kass to pursue the matter for the Society.

15. *Comments by the President Regarding Committee Structure, Autonomy, and Central Direction*

Beck reviewed the past year of his office and conveyed a number of constructive thoughts to the new president. After calling attention to the last paragraph of the last Board meeting minutes defining functions of committees, Beck emphasized the importance of committee autonomy. Committees are ready for autonomy, but lack channels of intercommunication, have too few formed ideas to supply their own objectives, are willing and able but are not piloted, and need more continuous directive from the Executive Board. The Executive Board should direct and pilot deputized committees through Board policy making which committees are delegated to carry out. Beck's review of the year's work has opened up a number of issues, for example, the need for formulations regarding training and standards, research needed in projective test practice, the relation between a university and a clinic (the theoretical and practical orientations), criteria for arriving at decisions regarding applicants for membership (Society policy is not clear and there is difficulty in properly answering correspondence), the Society's growth toward a set of values and formulated spheres of reference.

Discussion by Klopfer emphasized the fact that with the present arrangement of Board meetings twice yearly, it is now possible to maintain continuity of policy and planning,

and establish the executive board as really a planning board. There was further discussion regarding the desirability of a "cortex committee" for the specific purpose of policy and planning, since the Board of Trustees is not in a position to function both as a body designated to carry on Society day-to-day business and also devote the time and thought to policy planning. A committee of past presidents or some such sub-committee was suggested for this purpose which might consist of seniors and past officers. The possibility was considered of including policy and planning functions with the business of the Board of Trustees by adding a second day to the Board's deliberations at the next Orthopsychiatric meeting in New York.

After preparing the agenda for the annual business meeting later that week, the meeting was adjourned.

Respectfully submitted,
WILLIAM E. HENRY, PH.D.
Secretary pro-tem

WORKSHOPS

1956 WORKSHOP IN THE RORSCHACH TECHNIQUE OF PERSONALITY DIAG- NOSIS AND OTHER PROJECTIVE TECHNIQUES

Jointly sponsored by
Claremont Summer Session and
Children's Hospital, Los Angeles

Directed by BRUNO KLOPFER
July 25 - August 3

Asilomar Conference Grounds,
Pacific Grove, California

Program: (The number of two-hour sessions is indicated after each course.)

A. Introductory and Survey Lectures (4); B. Beginners and Intermediate Seminar in Rorschach Administration, Scoring, and Basic Interpretation (10); C. Case Study Seminar, including case history analysis, psychometric material and other projective material, especially T.A.T. (8); D.

Advanced Interpretation (minimum requirement: 100 case studies completed) (6); E. Thematic Test Analysis (6).

Section on Children's Rorschachs:

The section of the Workshop from July 27 to July 31 will be devoted to the study of the Rorschach technique as used with children. Planned for professional people who are competent in the use of the Rorschach test, an opportunity will be given to examine and discuss the Rorschach protocols of normal children and of children presenting various types of disorders.

Staff Members: Bruno Klopfer, Ph.D., Clinical Professor of Psychology, University of California at Los Angeles; L. LaVergne Letson, M.A., Psychologist, Psychiatric Service, Children's Hospital; Edwin S. Shneidman, Ph.D., Clinical Psychologist, V. A. Neuropsychiatric Hospital, Los Angeles; Helmut Wursten, Ph.D., Chief Psychologist, Psychiatric Service, Children's Hospital.

Tuition. Applicants may register either for the total Workshop period (tuition \$50), or for the period from July 27 to July 31 only (tuition \$30).

Claremont Summer Session Registration. Qualified graduate students accepted for the complete Workshop may register for 2 units of credit (Psychology 243 or 244 a, b, c).

All students wishing to qualify for graduate credit must apply to the Claremont Summer Session, Claremont, California, for the necessary forms before July 1, after they have been notified of admission to the Workshop. The Claremont Summer Session is fully approved for study under Public Law 346 and 550 and under State Aid.

Prerequisites for Admission. Psychologists applying for admission to the Workshop are expected to fulfill the following prerequisites:

1. At least second-year graduate standing in a recognized graduate

department of psychology. The academic background should include the successful completion of such basic courses as general, abnormal and clinical psychology, personality, tests, measurements and statistics.

2. At least one full year (or its equivalent) of professional experience, preferably in the field of clinical psychology.

Other professional persons eligible for training in the use of projective techniques, including psychiatrists, psychiatric social workers, sociologists, and anthropologists, are admitted on an individual basis.

Admission to the Workshop on the basis of the application, without a special application for graduate credit, entitles the applicant to full participation and to registration as an auditor in the Claremont Summer Session.

Room and Board. Asilomar has one building containing 15 two-bed rooms and one washroom each for men and women set aside for Workshop participants. The rates for accommodations in this building, including three meals a day, are \$5.50 per day per person.

Several motels are within walking distance. Non-resident students at Asilomar pay a camp fee of \$5.00 for the 10-day period. Meals for all participants will be served at the Asilomar Coffee Shop. Reservations for living accommodations should be made in advance, but not until after the application has been accepted. Asilomar reservations require a deposit of \$10.00 per person (not refundable except in case of illness). Make checks payable to Asilomar and mail to Dr. Bruno Klopfer.

Applications. To apply for admission to the Workshop, fill out and return the general application form below to DR. BRUNO KLOPFER, P.O. Box 2971, CARMEL, CALIFORNIA, before June 15, 1956.

GENERAL APPLICATION FOR SUMMER WORKSHOP, 1956

(Encircle the desired Workshop period below)

Date.....

July 25 - August 3

July 27 - July 31 only

Name.....

(Last Name) (First)

(Middle)

Marital Status.....

Address.....

(Number) (Street)

(City) (State)

College Education: Major Subject.....

Degree and Date Received.....

Work after Graduation:

1. Graduate study (institution, date, degree).....

2. Practical experience

Present Position

The Department of Psychology, University of Chicago, announces two Workshop Seminars in the Rorschach Test.

I. Basic processes. First week. Obtaining and scoring the test record. How to translate the raw free associations into the response categories; and how these interact to form the personality structure. Full case interpretation will be demonstrated.

II. Advanced clinical interpretation. Second week. The very disturbed younger child; the test's prediction and the child's course. Stress, defense, and ego in adolescents and in adults (non-psychotic). Treatment assets and implications.

Doctor S. J. Beck will conduct both seminars. The dates are July 9-13 and July 16-22, 1956. For information,

write to Department of Psychology, University of Chicago, Chicago 37, Illinois.

The Applied Psychology Centre of McGill University, Montreal, announces the second annual seminar on Projective Techniques and Personality Study, May 14-26, 1956.

Orientation:

The introductory section is primarily technique oriented. The intermediate and advanced sections on the other hand undertake to explore the relative merits of various psychodiagnostic techniques. The seminars are designed to meet the needs of psychologists, psychiatrists, and other professional workers concerned with the appraisal of personality in hospitals, clinics and research.

Program:

INTRODUCTORY: May 14-19 inclusive. The rationale of projective testing; Rorschach scoring and elementary interpretation. Intended for students with no previous Rorschach experience.

INTERMEDIATE: May 18-24 inclusive. Rorschach interpretation; finger painting; word association and other projective methods amenable to quantification; survey of objective behavior tests.

ADVANCED: May 23-26 inclusive. Case study seminar. Test material will be provided for "blind" interpretation and specific clinical problems will be reviewed in terms of their test behavioral correlates. Problems of differential diagnosis and research applications will be discussed.

Prerequisites:

All applicants must have had some university training in psychology and hold the B.A. degree or its equivalent. In addition applicants for the intermediate or advanced seminar must have done graduate work in clinical psychology or psychiatry and have at least one year's experience with the Rorschach test.

Staff:

The instructors, Herbert Dörken, Jr., Ph.D., Heinz Lehmann, M.D. and Ernest G. Poser, Ph.D., are fellows of the Society for Projective Techniques and members of the McGill University teaching staff.

Fees and Registration:

The Seminar fee is \$50.00 for the introductory or intermediate section. Registration is limited to 15 students in each.

The fee for the advanced seminar is \$35.00 and registration is limited to 10 students. The intermediate and advanced seminars may be taken in the same year the total fee being \$80.00.

Further information may be obtained from Dr. E. C. Webster, Applied Psychology Centre, McGill University, Montreal, Quebec.

A Workshop in Projective Methods is scheduled this summer, June 18 to July 7, at The New School for Social Research in New York City under the direction of Camilla Kemple and Florence R. Miale. The courses in one or two week units, offer introductory and advanced work in the Rorschach method. Classes meet during the evening hours and graduate credit is granted through the Graduate Faculty of The New School. Inquiries and requests for application blanks may be addressed to the Department of Psychology, Graduate Faculty, New School for Social Research, 66 West 12th Street, New York 11, N. Y.

Western Reserve University offers on the Rorschach Method three Workshops directed by Marguerite R. Hertz, Ph.D., Associate Clinical Professor of Psychology.

- I. Introduction to the Rorschach Method. June 11-15 inclusive
- II. Intermediate Course in the Interpretation and Clinical application of the Rorschach Method. June 18-22 inclusive

Lectures, demonstrations in the hospitals, and supervised training periods.

Admission to qualified psychiatrists, psychologists, research-workers in these fields, to graduate students specializing in Clinical Psychology having at least a full academic year's study or the equivalent in a recognized university.

Students in Workshop I may continue with Workshop II.

III. Advanced Course in the Interpretation of Rorschach records of various personality and clinical groups. June 25-29 inclusive
Admission limited to profession-

ally trained persons in psychology, psychiatry, and psychiatric work, who have had at least one full year of experience with the Rorschach Method.

All day sessions and one evening session.

Fee for each Workshop is \$40. One semester hour is credited for each Workshop in the cases of those who present a transcript of previous college record prior to registration.

Application forms should be addressed to:

The Department of Psychology
Western Reserve University
1901 Ford Drive
Cleveland 6, Ohio

The following manuscripts have been accepted for publication as of
February 15, 1956

- | | |
|--|--|
| Bloom, Bernard | Prognostic significance of the underproductive Rorschach. |
| Byrd, Eugene | The clinical validity of the Bender Gestalt with children. |
| Carr, Arthur C. | The relation of certain Rorschach variables to expression of affect in the TAT and SCT. |
| Coan, Richard | A factor analysis of Rorschach determinants. |
| Coleman, James C. and Smith, John R. | The relationship between manifestation of hostility in projective techniques and overt behavior. |
| Cramer, Fern J. | Personality changes and figure drawings. |
| Crandall, Vaughn J. | Observations on the use of projective techniques in child development. |
| Crumpton, Evelyn | The influence of color on the Rorschach test. |
| Dana, Richard H. | An application of objective TAT scoring. |
| Dörken, Herbert, Jr. | The Mosaic Test: Second review. |
| Fiedler, Miriam F. and Stone, L. Joseph | Rorschachs of selected groups of children in comparison with published norms: I. The effect of mild hearing defects on Rorschach performance.
II. The effect of socio-economic status on Rorschach performance. |
| Jones, Richard M. | The Negation TAT: A projective method for eliciting repressed thought content. |
| Kaplan, Bert; Rickers-Ovsiankina, Maria; and Joseph, Alice | An attempt to sort Rorschach records from four cultures. |
| Kaplan, Bert and Berger, Stanley | Increments and consistency of performance in four repeated Rorschach administrations. |
| Klopfer, Walter G. | The use of projective techniques in predicting performance in freshman psychiatry. |
| Light, Bernard H. and Amick, Jean H. | Rorschach responses of normal aged. |
| Meadow, Lloyd | A study of dyadic relationships in the French family. |
| Palmer, James O. | Attitudinal correlates of Rorschach's experience balance. |
| Pick, Thoman | A critique of current methods of Rorschach scoring. |
| Reichard, Suzanne | Projective techniques as research tools in studies of normal personality development. |
| Sigel, Irving and Hoffman, Martin L. | The predictive potential of projective tests for nonclinical populations. |
| Spiegelman, Marvin | Evaluation of personality by means of viewing a motion picture. |
| Stein, Harry | Developmental changes in content of movement responses. |
| Swensen, Clifford H. and Sippelle, Carl N. | Some relationships among sexual characteristics of human figure drawings. |
| Symonds, Percival M. and Dudek, Stephanie | Use of the Rorschach in the diagnosis of teacher effectiveness. |
| van Krevelen, D. A. | New experiences with the Wishing Test. |
| Wolfson, William and Wolff, Frances | Sexual connotation of the name Blacky. |

DIRECTORY OF MEMBERS OF THE SOCIETY FOR PROJECTIVE TECHNIQUES AND RORSCHACH INSTITUTE AS OF MARCH 1, 1956

Date preceded by F indicates date elected as Fellow
 Date preceded by A indicates date elected as Associate
 Date preceded by St. Aff. indicates date elected as Student Affiliate
 Date preceded by Aff. indicates date elected as Affiliate
 Date preceded by H.M. indicates date elected as Honorary Member
 Name preceded by * indicates Charter Member or Fellow

- ABEL, Theodora Mead (Ph.D.)
 Palisades A 1944
 Rockland County, N.Y. F 1945
- ABRAMS, Elias N. (Ph.D.)
 415 Lefferts Avenue
 Brooklyn 25, N. Y. A 1952
- ABRAMS, Jules C. (Ph.D.)
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 Philadelphia 44, Pa. A 1955
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 Psychology Department
 Springfield State Hospital
 Sykesville, Md. A 1954
- ABRAMS, Ray H. (Ph.D.)
 408 S. Lansdowne Avenue
 Landsdowne, Pa. A 1950
- ABRAMSON, Leonard S. (Ph.D.)
 Vet. Adm. Hosp. A 1948
 East Orange, N. J. F 1955
- ABT, Lawrence Edwin (Ph.D.)
 151 Rockland Avenue
 Larchmont, N. Y. A 1951
- ACKERMAN, Bernard R.
 124 E. 91st Street
 New York 28, N. Y. A 1943
- ADELMAN, Crusa
 20 E. 8th Street
 New York 3, N. Y. St. Aff. 1955
- AINSWORTH, Mary D. (Ph.D.)
 3700 Oak Avenue
 Lochearn A 1948
 Baltimore 7, Md. F 1950
- ALCOCK, Miss Theodora
 Central Middlesex Group
 Hospital Management Com.
 Tavistock Clinic
 2, Beaumont Street
 London, W. 1 F 1953
- ALDEN, Priscilla
 1963 W. Broad
 Columbus, Ohio A 1949
- ALEXANDER, Robert H. (Ph.D.)
 Department of Psychology
 MacMurray College
 Jacksonville, Ill. A 1950
- ALEXANDER, William A.
 2920 W. Boston Blvd. (Ph.D.)
 Detroit 6, Mich. A 1955
- ALLEN, Doris Twitchell (Ph.D.)
 30 W. Fountain Avenue
 Glendale, Ohio A 1949
- ALLEN, Robert M. (Ph.D.)
 Department of Psychology
 University of Miami A 1949
 Miami 46, Florida F 1951
- *ALOZERY, Jessie Jervis (Ph.D.)
 Bureau of Child Guidance
 228 E. 57th Street
 New York 22, N. Y. F 1940
- AMCHIN, Abraham
 State School
 Warwick, N. Y. A 1952
- AMES, Mrs. Louise Bates
 Gesell Institute of Child
 Development
 310 Prospect Street
 New Haven 11, Conn. A 1951
- ANASTASIO, Mary M.
 10 Downing Street
 New York 14, N. Y. A 1952
- ANDERSON, Dorothy V. (Ph.D.)
 3250 Laurel Canyon Blvd.
 No. Hollywood, Calif. A 1953
- ANDERSON, Helen Joan
 Suite 829, Hotel Bossert
 98 Montague Street
 Brooklyn 1, N. Y. A 1949
- ANTWARG, Alexander
 1690 Longfellow Avenue
 Bronx 60, N. Y. A 1955
- APPELL, Melville J.
 858 Seward Avenue
 Akron 20, Ohio A 1950
- ARMON, Mrs. Mary Virginia
 470 W. Avenue 43
 Los Angeles 65, Calif. A 1946
- ARNHOF, Franklyn N. (Ph.D.)
 Nebraska Psychiatric Institute
 University of Nebraska
 College of Medicine
 Omaha, Nebr. A 1955
- ARONSON, Mrs. Margaret R.
 262 Central Park West
 New York 24, N. Y. A 1948
- ARONSON, Marvin L. (Ph.D.)
 225 E. 73rd Street
 New York 21, N. Y. A 1951
- AUERBACH, Mrs. Aline B.
 440 East 56th Street
 New York 22, N. Y. A 1944
- AZIMA, Mrs. Fern Cramer
 Allan Institute
 1025 Pine Avenue W.
 Montreal, P.Q., Canada A 1951
- BACHRACH, Arthur J. (Ph.D.)
 Department of Neurology and
 Psychiatry, University of
 Virginia Hospital
 Charlottesville, Va. A 1950
 F 1954
- BAKER, Corinne F. (Ph.D.)
 1839 Farmington Road
 East Cleveland 12, O. A 1943
- BAKER, Gertrude (Ph.D.)
 2726 Montana Avenue
 Santa Monica, Calif. A 1948
- BALKEN, Eva Ruth (Ph.D.)
 133 East 58th Street
 New York 22, N. Y. A 1948
- BALL, Josephine (Ph.D.)
 R.D. 1
 Perryville, Md. A 1949
- BARAHAL, George D. (Ph.D.)
 Clinical and Ed. Psychology
 Wayne University
 Detroit 1, Mich. A 1954
- BARBARA, Dr. Peter Paul
 Box W
 Newton, Conn. A 1952
- BARKLEY, Bill J. (Ph.D.)
 1481 Warrensville
 Center Road
 Cleveland 21, Ohio A 1950
- BARNETT, Irving (Ph.D.)
 419 W. 119th Street
 New York 27, N. Y. A 1950
- BARON, Louis K.
 6238 N. Tenth Street
 Philadelphia 41, Pa. A 1951
- BARON, Samuel (Ph.D.)
 39-45 47th Street
 Long Island City 4, N. Y. A 1944
- BARRATT, Mrs. Emily C.
 Marple Road
 Broomall, Pa. A 1952
- BARRELL, Robert P. (Ph.D.)
 Psychology Department
 Veterans Adm. Hospital
 Downey, Ill. A 1952
- BARRINGER, Benton E. (Ph.D.)
 138 Fort Hill Avenue
 Canandaigua, N. Y. A 1951
- BARRY, John R. (Ph.D.)
 Western Psychiatric Inst.
 3811 O'Hara Street
 Pittsburgh 13, Pa. A 1953
- BARTLETT, Mrs. Doris A.
 924 West End Avenue
 New York 25, N. Y. A 1949
- BAUER, Johanna R. Goldsmith
 831 Oste Drive
 Davis, Calif. A 1945
- BEALE, Elizabeth A.
 304 W. 14th Street
 Lawrence, Kansas A 1951
- BEAUCHEMIN, Jean M.
 10793 Esplanade
 Montreal 12, Quebec
 Canada A 1952
- BECK, Samuel J. (Ph.D.)
 Department of Psychology
 University of Chicago
 Chicago 37, Ill. F 1950
- BEISEL, Mrs. Lillie Burling
 104 Beach Avenue
 Larchmont, N. Y. A 1944
- BELL, John E. (Ed.D.)
 Putnam Road
 Holden, Mass. A 1949
 F 1951
- BELLAK, Leopold (M.D.)
 1160 Fifth Avenue
 New York 29, N. Y. A 1948
 F 1952
- BERAN, Marianne (Ph.D.)
 Veterans Adm. Hospital
 Lyons, N. J. A 1949
- BERLINER, Anna (Ph.D.)
 Pacific University
 Forest Grove, Ore. A 1954
- BERNSTEIN, Mrs. Hilde R.
 5470 Hydepark Blvd.
 Chicago 15, Ill. A 1953
- BERNSTEIN, Mrs. Mildred
 2084 Smith Street
 Merrick, L. I., N. Y. A 1950
- BERRICK, Myron E. (Ph.D.)
 1086 Ocean Avenue
 Brooklyn 30, N. Y. A 1955
- BILLIG, Otto (M.D.)
 Department of Psychiatry
 Vanderbilt University
 Hospital
 Nashville, Tenn. A 1941
 F 1950
- *BILLINGS, Edward G. (M.D.)
 1820 High Street
 Denver 6, Colo. F 1940
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 Box 21
 West Willington, Conn. St. Aff. 1955
- BLAU, Theodore H. (Ph.D.)
 420 W. Lafayette Street
 Tampa, Fla. A 1955

- BLESSING, Harold D. (Ph.D.)
3827 Nancy Avenue
Dunlinden Acres
Wilmington 8, Del. A 1953
- BLOCH, Mrs. Beatrice
164 W. 79th Street
New York 24, N. Y. A 1946
- BLUM, Lucille Hollander (Ph.D.)
17 W. 67th Street
New York 23, N. Y. A 1947
- BLUMSTEIN, Mrs. Molly G.
5219 Wayne Avenue
Philadelphia 44, Pa. A 1948
- BOGARDUS, Helen (Ed.D.)
323 14th Avenue North
Seattle 2, Wash. A 1949
- BOLES, Glen
251 Central Park West
New York 24, N.Y. St. Aff. 1953
- BONDEL, Mrs. Gertrude
2049 McGraw Ave. St. Aff. 1953
New York 62, N. Y. A 1954
- BORSTELMAN, Lloyd J. (Ph.D.)
Child Guidance Clinic
2212 Erwin Road
Durham, N. C. A 1950
- BOURKE, William T. (Ph.D.)
VA Mental Hygiene Clinic
333 St. Charles Street
New Orleans, La. A 1950
- BOWEN, Barbara
RFD 2
Concord, N. H. A 1953
- *BRADWAY, Katherine P. (Ph.D.)
41 Monte Mar Drive
Sausalito, Calif. F 1949
- BRANDON, Grace H.
Court House Annex
Chambersburg, Pa. A 1950
- BRANDT, Rudolph J. (Ph.D.)
435 Roxbury Drive
Beverly Hills, Calif. A 1950
- BRAUN, Mrs. Roslyn R.
170-15 Highland Avenue
Jamaica Estates 32, N.Y. A 1949
- BRECHER, Sylvia (Ph.D.)
Psychology Department
Grasslands Hospital
Valhalla, N. Y. A 1951
- BRODIE, Mrs. Dorothy B.
4833 Tenth Ave. N.
St. Petersburg, Fla. F 1950
- BRODY, Abraham (Ph.D.)
410 Central Park West
New York 25, N. Y. A 1952
- BRODY, Claire M. (Ph.D.)
73 Ivy Lane
Englewood, N. J. A 1955
- BRODY, Gertrude Gillenson
410 Central Park West (Ph.D.)
New York 25, N. Y. A 1948
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5350 42nd Place, N.W.
Washington 15, D. C. A 1944
- *BROSIN, Henry W. (M.D.)
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3811 O'Hara Street
Pittsburgh 13, Pa. F 1940
- BROUGHAM, Norma
441 King Street
London, Ontario, Can. A 1953
- BROWER, Daniel (Ph.D.)
300 N. Mountain Ave.
Upper Montclair, N. J. F 1954
- BROWER, Mrs. Judith F.
300 North Mountain Avenue
Upper Montclair, N. J. A 1948
- BROWN, Fred (Ph.D.)
Mt. Sinai Hospital
Fifth Ave. and 100th St.
New York, N. Y. A 1948
F 1950
- BROWN, Martha
10 Kulp Court
Battle Creek, Mich. A 1948
- BROWNFAIN, John J. (Ph.D.)
1935 Burlingame Avenue
Detroit 6, Mich. A 1954
- BROZOVICH, Stanley M.
449 E. Pine
Altadena, Calif. A 1953
- BRUCE, Martin M. (Ph.D.)
71 Hanson Lane
New Rochelle, N. Y. A 1952
- BRUNSCHWIG, Lily (Ph.D.)
219 Arcadia Street
Park Forest, Ill. A 1953
- BRY, Mrs. Mae G.
59 W. 12th Street
New York 11, N. Y. A 1954
- BUCK, John N.
1600 Langhorne Road
Lynchburg, Va. A 1950
- BUHLER, Charlotte (Ph.D.)
1127 N. Sweetzer
Los Angeles 46, Calif. F 1951
- *BURCHARD, Edward M. L.
55 E. 86th Street
New York 28, N. Y. F 1940
- BURGEMEISTER, Bessie B.
Neurological Institute (Ph.D.)
710 W. 168th Street
New York 32, N. Y. F 1947
- BURTON, Arthur (Ph.D.)
2251 Boxwood Drive
San Jose, Calif. A 1949
- CALABRESI, Renata A. (Ph.D.)
360 Central Park West
New York 25, N. Y. F 1950
- CALIGOR, Leopold (Ph.D.)
300 W. 109th Street
New York 25, N. Y. A 1952
- CALVERT, Margaret
Verdun Protestant Hospital
P.O. Box 6034
Montreal, Que., Can. A 1952
- CAMPION, John Neil, Jr.
510 E. Magnolia Street
Stockton 4, Calif. A 1952
- CANTAROW, Mrs. Elizabeth S.
2033 Delancey Street
Philadelphia 3, Pa. A 1950
- CANTER, Aaron H. (Ph.D.)
2939 N. 47th Street
Phoenix, Ariz. F 1952
- *CARO, Mrs. Elizabeth R.
2014 Grove Avenue
Richmond, Va. A 1940
- CARPENTER, Kenneth E.
49 Medway Street
Providence, R. I. A 1953
- CARR, Arthur C. (Ph.D.)
Creedmoor State Hospital
Station 60
Queens Village, N. Y. A 1953
- *CARROLL, Clara
Bureau of Child Guidance
228 East 57th Street
New York 22, N. Y. F 1940
- CARSON, Marjorie
Children's Aid and
Infants' Homes of Toronto
33 Charles Street East
Toronto 5, Ont., Can. A 1952
- CARTER, Linda Louise
1115 Wertland Street
Charlottesville, Va. A 1949
- CARTWRIGHT, Robert W.
108 W. Constance Ave. (Ph.D.)
Santa Barbara, Calif. A 1952
- CASSEL, Russell N. (Ed.D.)
106 W. Crestline Drive
San Antonio, Texas A 1954
F 1955
- CEASE, Eugene
Box 234
Warren State Hospital
Warren, Pa. A 1951
- CHAMOULOUD, Mrs. Muriel I.
607 Euclid Avenue
Elmira, N. Y. A 1945
- CHAREN, Dr. Sol
200 Rhode Island Avenue, N.E.
Washington 2, D.C. A 1949
- CHU, Thomas W.
770 West End Avenue
New York 25, N. Y. A 1955
- CLAPP, Chester D. (Ph.D.)
14074 Riverview
Detroit 23, Mich. A 1954
- *CLAPP, Mrs. Hazel S.
18 W. Micheltorena Street
Santa Barbara, Calif. A 1940
- CLAUSS, Helen O.
19 W. Market Street
Danville, Pa. A 1951
- CLERK, Mrs. Gabrielle Brunet
3877 Maplewood Avenue
Montreal, Que., Can. A 1949
- COHEN, Bernard B.
29 Erringer Place Apartments
Philadelphia 44, Pa. A 1955
- COHEN, Mrs. Mathilde Weill
46 E. 91st Street
New York 28, N. Y. A 1942
- COHEN, William J. (Ph.D.)
37 Colonial Park Drive
Springfield, Pa. A 1951
- *COHN, Frederick E. (M.D.)
77 E. Market Street
Rhinebeck, N. Y. A 1940
- COHN, Mrs. Ruth C.
159 Liberty Road
Englewood, N. J. A 1946
- COLE, Joseph Carl (Ph.D.)
Metropolitan State Hospital
Psychology Department
Norwalk, Calif. A 1949
- COLM, Hanna (Ph.D.)
3 Overhill Road
Falls Church, Pa. A 1944
- COOK, Philip H. (Ph.D.)
Department of Labour and
National Service
Swanston Street
Melbourne c.1
Victoria, Australia F 1949
- *COWIN, Marion
433 West 21st Street
New York 11, N. Y. F 1940
- COX, Grace B.
Psychological Services
Bureau of Mental Health
Harrisburg, Pa. A 1950
- COX, Rachel Dunaway (Ph.D.)
503 Walnut Lane
Swarthmore, Pa. A 1950
F 1952
- CRAIN, William
1781 Westmont Drive
Anaheim, Calif. A 1955
- CRILE, Mrs. Mary
Box 1083
Carmel, Calif. A 1945
- GROVETTO, Lorraine
703 Carondelet Street
New Orleans 12, La. A 1953
- CRUMPTON, Evelyn (Ph.D.)
1451 1/4 Barry Avenue
Los Angeles 25, Calif. A 1955
- CUMMINGS, C. Peter (Ph.D.)
626 Swede Street
Norristown, Pa. A 1954
- CUNNINGHAM, Mrs. Cornelia
100 Chesney Lane
Philadelphia 18, Pa. A 1950

- D'ANGELO, Rita Y.
2604 University Avenue
Bronx 68, N. Y. A 1955
- DAVENPORT, Beverly (Ph.D.)
Veterans Adm. Hospital
American Lake, Wash. A 1949
- DAVID, Henry P. (Ph.D.)
Lafayette Clinic
951 East Lafayette Street
Detroit 7, Mich. A 1953
- DAVIDSON, Alene (Ph.D.)
280 Melbourne Road
Great Neck, N. Y. A 1953
- *DAVIDSON, Helen H. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. F 1940
- DAVIS, John A. (Ph.D.)
2444 Archwood Drive
Dayton 6, Ohio A 1955
- DAVISON, Arthur H. (Ph.D.)
California State Prison
San Quentin, Calif. F 1953
- DERI, Mrs. Susan K.
235 W. 76th Street
New York 23, N. Y. A 1948
F 1950
- DERNER, Gordon F. (Ph.D.)
Department of Psychology
Adelphi College
Garden City, N. Y. A 1949
F 1951
- DE VAULT, Mrs. Barbara Allen
Department of Psychology
Allan Memorial Institute
1025 Pine Avenue West
Montreal 2, Can. A 1953
- DE VAULT, Helen C.
593 33rd Street
Manhattan Beach, Calif. A 1950
- DE VILLIERS, David Z.
University College
Fort Hare
Union of South Africa A 1953
- DIAMOND, Mrs. Florence
135 Sierra View Road
Pasadena 2, Calif. A 1950
- DIAMOND, Mrs. Gertrude S.
1328 Sage Street
Far Rockaway, N. Y. A 1948
- DIANA, Pearl Butler (Ph.D.)
304 N. Park Street
Crown Point, Ind. A 1949
F 1951
- DINGMAN, Paul R. (Ph.D.)
Child Guidance Center
500 Garver Building
Des Moines, Iowa A 1950
- DOMINGUEZ, Kathryn (Ph.D.)
15 Susquehanna Avenue
Forty Fort, Pa. A 1943
- DORKEN, Herbert, jr. (Ph.D.)
Verdun Protestant Hospital
P.O. Box 6034
Montreal, Que., Can. A 1949
F 1951
- DOUGHERTY, Mrs. Margaret R.
1804 Roselynn Avenue
Scranton 10, Pa. A 1944
- DRYSELIOUS, Harold
601 S. Gramercy Place
Los Angeles, Calif. A 1950
- DRYZER, Evelyn F.
14861 Sussex
Detroit 27, Mich. A 1953
- DUDEK, Stephanie Z.
258 W. 22nd Street
New York 3, N. Y. A 1949
- DUE, Floyd O. (M.D.)
370 29th Street
Oakland 9, Calif. A 1943
- DUFRESNE, Georges
49 Spring Grove Crescent
Outremont, near Montreal
Canada A 1954
- DUNLAP, Dorothy
Agnews State Hospital
Agnew, Calif. A 1954
- DUNN, Michael B. (Ph.D.)
207 Midland Avenue
Wayne, Pa. A 1941
F 1943
- *EARL, C. J. C. (F.R.C.P.I.)
2 Dale Drive
Stillorgan, County Dublin
Ireland F 1940
- EIDUSON, Mrs. Bernice T.
941 Stonehill Lane
Los Angeles 49, Calif. A 1949
- EISNER, Mrs. Willard D.
530 Gretna Green Way
Los Angeles 49, Calif. St. Aff.
1955
- ELDRED, Donald M.
Psychology Department
Vermont State Hospital
Waterbury, Vt. A 1948
- ELIZUR, Abraham (Ph.D.)
6 Tel Hai Street
Tel Aviv, Israel A 1949
- ELLIOTT, Merle H. (Ph.D.)
1025 Second Avenue
Oakland 6, Calif. A 1944
- ELLIS, Albert (Ph.D.)
Parc Vendome
333 W. 56th Street
New York 19, N. Y. A 1950
- *EMERY, Margaret
43 Fifth Avenue
New York, N. Y. F 1940
- ENOCHS, Neil
366 Marie Avenue
Los Angeles 42, Calif. St. Aff. 1954
- EPHRON, Beulah K. (Ed.D.)
40 E. 10th Street
New York 3, N. Y. A 1949
- EPSTEIN, Hans L. (Ph.D.)
722 W. 176th Street
New York 33, N. Y. A 1944
- ERICSON, Mrs. Helen
11844 E. Deana Street
El Monte, Calif. Aff. 1954
- ERON, Leonard D. (Ph.D.)
Rip Van Winkle Foundation
454 Warren Street
Hudson, N. Y. F 1955
- EVANS, John T. (Ph.D.)
85 Otis Street
Newtonville 60, Mass. A 1951
- EVANS, Ray B.
2915 Rimpau Boulevard
Los Angeles 16, Calif. A 1954
- EVERETT, Evalyn G. (Ph.D.)
Box 51
Napa State Hospital
Imola, Calif. A 1953
- FARBROW, Norman L. (Ph.D.)
4211 Holly Knoll Drive
Los Angeles 27, Calif. A 1949
- FARLEY, Julie (M.D.)
418 Northway
Baltimore, Md. A 1949
- FATERSON, Hanna F. (Ph.D.)
27 Jane Street
New York 14, N. Y. A 1943
F 1946
- FEHRENBACH, Mrs. Alice
181 Magnolia Street
Denver 20, Colo. A 1951
- FEIFFEL, Herman (Ph.D.)
VA Mental Hygiene Clinic
1031 S. Broadway
Los Angeles 15, Calif. A 1943
- FEINBERG, Henry
15886 La Salle
Detroit, Mich. A 1949
- FELDBERG, Theodore M. (M.D.)
Johns Hopkins Hospital
Baltimore 5, Md. A 1944
- FELDMAN, Dorothy A. (Ph.D.)
5225 Ellsworth Avenue
Pittsburgh 32, Pa. A 1952
- FELDMAN, Irving (Ph.D.)
141 Bodman Place
Red Bank, N. J. A 1953
- FELZER, Dr. Stanton B.
Co. B—1st Bn.
Med. Field Serv. School
Brooke Army Med. Center
Ft. Sam Houston, Tex. A 1954
- FERGUSON, Kingsley G.
101 Grand Avenue
London, Ont., Canada A 1954
- FERRACUTI, Franco (M.D.)
Via Ugo Balzani 57
Rome, Italy A 1954
- FICHMAN, Lionel L.
237 South Sepulveda Blvd.
Los Angeles 49, Calif. St. Aff. 1954
- FIKE, Mrs. Irene A
271 Nelson Road
Scarsdale, N. Y. A 1941
- FILMER-BENNETT, Gordon
Norfolk State Hospital
Norfolk, Nebraska A 1954
- FILS, David H. (Ph.D.)
Los Angeles County
Supt. of Schools Office
808 N. Spring Street
Los Angeles, Calif. A 1954
- FINE, Harold J. (Ph.D.)
VA Mental Hygiene Clinic
355 Fairfield Avenue
Bridgeport, Conn. A 1955
- FINE, Reuben (Ph.D.)
225 W. 86th Street
New York 24, N. Y. A 1949
F 1954
- FINN, Michael H. P. (Ph.D.)
Springfield State Hospital
Sykesville, Md. A 1954
- FISCHER, Liselotte K. (Ph.D.)
615 North Wolfe Street
Baltimore 12, Md. A 1949
- FISHER, Jerome (Ph.D.)
121 Havenside Drive
San Francisco 27, Calif. A 1950
- FLEMMING, Edward L. (Ed.D.)
10585 Lakeview Road East
Jacksonville 11, Fla. A 1954
- FONT, Marion McKenzie
627 S. Carrollton Ave.
New Orleans 13, La. A 1942
F 1947
- FORER, Bertram R. (Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1949
F 1951
- FORER, Lucille K. (Ph.D.)
2170 Live Oak Drive E.
Los Angeles 28, Calif. A 1953
- FORREST, Mrs. Carol W.
55 West 11th Street
New York, N. Y. A 1951
- FORTIN, Mrs. Claire Mathieu
1260 Leyden Street
Denver 2, Colo. A 1950
- *FOSBERG, Irving A. (Ph.D.)
1516 Arabella Street
New Orleans 15, La. A 1940
F 1949
- FOSTER, Austin (Ph.D.)
The Psychopathic Hospital
University of Texas
Medical Branch
Galveston, Texas A 1950
F 1955
- FRAMO, James L., Jr. (Ph.D.)
2130 MacLarie Lane
Broomall, Pa. A 1955
- FRANCOEUR, Thomas A.
1070 Crevier Avenue
Ville St. Laurent
Prov. Que., Canada Aff. 1954

- FRANK, Lawrence K.
25 Clark Street
Belmont 78, Mass. H.M. 1954
- FRANKEL, Esther B. (Ph.D.)
348-A Wilson Avenue A 1953
Downsview, Toronto, Can.
- *FRANZETTI, Mrs. Rosa
Padlina de
"El Silencio" Bloque 6-C-4
Caracas, Venezuela A 1940
- FREAR, Edgar
Montrose, Pa. A 1950
- FREY, Mrs. Harriet K.
59 Francisco Avenue
West Caldwell, N. J. A 1953
- FRIEDMAN, Alice (Ph.D.)
780 Madison Avenue
New York 21, N. Y. A 1951
- FRIEDMAN, Gladys Miller
2860 Van Aken Blvd.
Cleveland 20, Ohio A 1949
- FRIEDMAN, Howard (Ph.D.)
316 Southfield Drive
Fayetteville, N. Y. A 1951
- FRIEDMAN, Ira (Ph.D.)
2860 Van Aken Boulevard
Cleveland 20, Ohio A 1954
- FRIEND, Mrs. Jeannette G.
16 Greenough Circle
Brookline 46, Mass. A 1949
- *FROMM, Erika O. (Ph.D.)
5717 S. Kenwood
Chicago 37, Ill. A 1940
- FRY, Franklin D.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FRY, Mrs. Martha O.
1724 Wyoming Avenue
Forty Fort
Wilkes-Barre, Pa. A 1952
- FUCHSMAN, Seymour H.
225 W. 86th Street
New York 24, N. Y. A 1944
- GARDNER, Mrs. Ann K.
2569 Berkshire Road
Cleveland 6, Ohio A 1942
- GASOREK, Kathryn
30 E. Elm Street
Linden, N. J. A 1949
- GASTON, Charles O.
B-19 Foundation Apts.
Galveston, Texas St. Aff. 1955
- *GAUDET, E. Louise (Ph.D.)
210 W. 70th Street
New York 23, N. Y. F 1940
- GAUDET, Frederick J. (Ph.D.)
210 W. 70th Street
New York 23, N. Y. A 1949
- GEIL, George A.
919 Kings Avenue
Springfield, Mo. A 1943
- GELLES, Herbert M.
295 Wadsworth Avenue
New York 33, N. Y. St. Aff. 1953
- *GERING, Mrs. Evelyn E.
18063 Valley Vista Blvd.
Encino, Calif. A 1940
- GERSTEN, Charles (Ph.D.)
1821 Grandin Street S.W.
Roanoke, Va. A 1949
- GIBBY, Robert G. (Ph.D.)
1220 Jeffras Avenue
Marion, Ind. A 1954
F 1955
- GILBERT, Raymond R.
32 Halifax Street
Boston 30, Mass. A 1951
- GILLENSON, Gertrude N.
See Brody, Gertrude G. (Ph.D.)
- GILLMAN, Mrs. Etta C.
16 Stevenson Avenue
Hartsdale, N. Y. A 1944
- GLASS, Blanche
Box W
Newtown, Conn. A 1955
- GOLDFARB, William (M.D.)
530 West End Avenue A 1941
New York 31, N. Y. F 1944
- GOLICK, Mrs. Margaret
944 Dunlap Avenue A 1953
Outremont, Quebec, Canada
- GONDOR, Mrs. Lily H.
320 East 57th Street A 1949
New York 22, N. Y. F 1952
- GOODMAN, Harvey (Ph.D.)
97 Cedarhurst Avenue
Cedarhurst, N. Y. A 1954
- GOODMAN, Morris (Ph.D.)
3 Wellington Road
Livingston, N. J. A 1953
- GOOLISHIAN, Harold A. (Ph.D.)
1008 Camp Circle West
La Marque, Texas A 1952
- GORDON, Dr. Edward M.
39-A E. 72nd Street A 1955
New York 21, N. Y.
- GORDON, Thelma
307 W. 11th Street A 1951
New York 14, N. Y.
- GOTTIEB, Mrs. Sophie B.
225 W. 86th Street A 1943
New York 24, N. Y.
- GRAHAM, Virginia T. (Ph.D.)
General Hospital, N-3
Cincinnati 29, Ohio A 1953
- GRASSI, Joseph R.
Bowman-Gray School of Med.
Wake Forest College
Winston-Salem, N. C. A 1942
- GRAVES, Winifred S. (Ph.D.)
4242 Cornelius Ave. A 1948
Indianapolis 8, Ind. F 1951
- GRAYSON, Harry M.
12640 Oxnard Street A 1951
North Hollywood, Calif.
- GREENBERG, Nathan
5447 Jeanne Mance Street
Montreal, Quebec
Canada St. Aff. 1954
- GREENBERG, Pearl (Ph.D.)
25 W. Henry Street A 1951
Linden, N. J.
- GREENE, Janet S. (Ph.D.)
65 E. 76th Street A 1953
New York 21, N. Y.
- GREENSTADT, William M.
35 E. 30th Street St. Aff. 1954
New York, N. Y. A 1955
- GROFF, Marne L. (Ph.D.)
QTRS "G"
US Naval Shipyard
Pearl Harbor, T.H. A 1952
- GROSSMAN, Mrs. Marc J.
16950 S. Woodland Road A 1949
Shaker Heights, Ohio
- GROSSMAN, Searles A. (Ph.D.)
23 Kensington Lane A 1951
Brookside, Newark, Del. F 1954
- GUERTIN, Wilson H. (Ph.D.)
Box 635 A 1950
Perry Point, Md. F 1953
- GUINDON, Jeannine
39 Ouest Gouin Blvd.
Montreal, Que., Can. A 1951
- GUNDLACH, Ralph (Ph.D.)
10 E. 76th Street A 1951
New York 21, N. Y.
- GUREVITZ, Saul (Ph.D.)
680 West End Avenue A 1949
New York 25, N. Y.
- GURVICH, Mrs. Bernice M.
251 Willis Avenue A 1950
Hawthorne, N. Y.
- GURVITZ, Milton S. (Ph.D.)
108 Hampshire Road A 1948
Great Neck, N. Y. F 1951
- GUY, William
Springfield State Hospital
Sykesville, Md. A 1953
- HABER, Wm. B. (Ph.D.)
275 Central Park West
New York 24, N. Y. A 1953
- HAINES, Miriam S. (Ph.D.)
166 Morse Place
Englewood, N. J. A 1951
- *HALLOW, William C. (Ph.D.)
515 S. Fifth Avenue
Lebanon, Pa. A 1940
- *HALLOWELL, A. Irving (Ph.D.)
Box 14, Bennett Hall
Univ. of Pennsylvania A 1940
Philadelphia 4, Pa. F 1944
- HALLOWELL, Dorothy K.
3318 Midvale Avenue (Ph.D.)
Philadelphia 29, Pa. A 1947
- HALPERIN, Sidney L. (Ph.D.)
Bureau of Mental Hygiene
Department of Health
University of Hawaii
Honolulu 14, Hawaii A 1949
- HALPERN, Esther
3570 Ridgewood Avenue
Montreal, Canada St. Aff. 1954
- HAMMER, Emanuel F. (Ph.D.)
210 Riverside Drive
New York 25, N. Y. A 1953
- HAMMOND, Mrs. Eleanor
R.D. 2
New Hope, Pa. A 1947
- HAND, Mary Ella
432 Hamilton Place
Ann Arbor, Mich. A 1948
- HANDEL, Gerald
Committee on Human
Development
University of Chicago
Chicago 37, Ill. A 1954
- HANFMANN, Eugenia (Ph.D.)
17 Dunster Street A 1948
Cambridge 38, Mass. F 1950
- HARRIS, Albert J. (Ph.D.)
Educational Clinic
Queens College
Flushing, N. Y. A 1951
- HARRIS, June
Bureau of Child Guidance
228 E. 57th Street
New York 22, N. Y. A 1941
- HARRIS, Robert A. (Ph.D.)
Psychology Department
Brooklyn College
Brooklyn 10, N. Y. A 1954
- HARRIS, Robert E. (Ph.D.)
University of California
Medical School
San Francisco 22, Calif. A 1948
- HARRIS, William W.
210 E. 181st Street
Bronx, N. Y. A 1949
- *HARROWER, Molly R. (Ph.D.)
55 E. 86th Street
New York 28, N. Y. F 1940
- HARTZLER, Ethel N.
Superintendent's Office
Northumberland County
Public Schools
Court House Annex
Sunbury, Pa. A 1951
- HAWKINS, Mrs. Hermione
Garrison Forest Road
Owings Mills, Md. A 1951
- HAYS, Berta
250 S. Kenmore
Los Angeles 4, Calif. A 1949

- HEBERT, Bernard
P.O. Box 614 A 1955
Digby, Nova Scotia, Can.
- HEISLER, Verda (Ph.D.)
1541 Eighth Avenue A 1951
San Diego, Calif.
- HELLERSBERG, Elisabeth F.
641 Whitney Avenue (Ph.D.)
New Haven, Conn. A 1949
- HEMMENDINGER, Larry
58 Judd Street (Ph.D.)
Fairfield, Conn. A 1950
- HENRY, William E. (Ph.D.)
5835 Kimbark Avenue A 1948
Chicago, Ill.
- HERNESS, Mrs. Christina
Amherst H. Wilder Child
Guidance Clinic
670 Marshall Avenue
St. Paul 4, Minn. A 1952
- HERRMANN, Katherine F.
115-A Ogden Avenue A 1946
Swarthmore, Pa. F 1950
- *HERTZ, Marguerite R. (Ph.D.)
2835 Drummond Road
Shaker Heights, Ohio F 1940
- *HERTZMAN, Max (Ph.D.)
Department of Psychology
College of City of N. Y. A 1940
New York, N. Y. F 1946
- HIGBEE, Dale S. (Ph.D.)
VA Hospital
Salisbury, N. C. A 1955
- HIGGINSON, G. K. (Ph.D.)
6040 N. Montana
Portland, Ore. A 1954
- *HILDEN, Arnold H. (Ph.D.)
628 Clark Avenue A 1940
Webster Groves 19, Mo. F 1943
- HILKEVITCH, Rhea R. (Ph.D.)
Roosevelt University
430 S. Michigan Avenue
Chicago 5, Ill. A 1954
- HIMELSTEIN, Philip
Clinical Psychological Service
VA Hospital
Roanoke 17, Va. A 1956
- *HIRNING, L. C. (M.D.)
62 Waller Avenue
White Plains, N. Y. F 1940
- HIRSCH, Mrs. Janet F.
67-49-C 192nd Street
Fresh Meadows, N. Y. A 1948
- HIRST, Mrs. Carol G.
Psychology Department
State Hospital
Norristown, Pa. A 1952
- HOCH, Erasmus L. (Ph.D.)
P.O. Box 62
Readfield Depot, Me. A 1954
- HOCKER, Margaret W.
220 Reilly Street
Harrisburg, Pa. A 1951
- HOLMES, Frances B. (Ph.D.)
R.D. 2, Harwinton
Torrington, Conn. A 1950
- HOLODNIAK, Helen Barbara
31-38-36th Street
Astoria 3, L. I., N. Y. A 1949
- HOLT, Robt. R. (Ph.D.)
N.Y.U. Research Center for
Mental Health
21 Washington Place A 1948
New York 3, N. Y. F 1951
- HOLZBERG, Jules D. (Ph.D.)
Box 351
Middletown, Conn. A 1949
F 1954
- HORLICK, Reuben S. (Ph.D.)
3004 N. Stuart Street
Arlington 7, Va. A 1951
- HOUCK, Dorothy
220 E. 12th Street
New York, N. Y. A 1952
- HOUSMAN, Harold S. (Ph.D.)
2550 Ivanhoe Drive
Pontiac, Mich. A 1954
- HOWARD, J. W. (Ph.D.)
Route 2
Rigaud, P.Q., Canada A 1954
- HOWARD, Stephen J.
3601 Marcia Drive St. Aff. 1954
Los Angeles 26, Calif.
- HOWLAND, Allan O.
Administration Building
State Hospital
Norristown, Pa. A 1951
- HUGHES, Robert M. (Ph.D.)
3936 Redding Rd., N.E. A 1944
Atlanta 19, Ga. F 1954
- HUTT, Max L. (Ph.D.)
Department of Psychology
University of Michigan A 1947
Ann Arbor, Mich. F 1952
- IMRE, Paul
Spring Grove State Hospital
Catonsville 28, Md. A 1954
- INMAN, John M.
1310 La Loma Avenue
Berkeley 8, Calif. A 1945
- IVES, Margaret (Ph.D.)
St. Elizabeths Hospital
Washington 20, D.C. A 1953
F 1955
- JACOBS, Martin E. (Ph.D.)
27 Radial Lane
Levittown, N. Y. A 1955
- *JACOBY, Julia
R.D. 3
Lincoln, Nebr. A 1940
- JAHODA, Hedwig (Ph.D.)
500 W. 235th Street
New York 63, N. Y. A 1952
- JEFFREYS, Alvis W., Jr. (Ph.D.)
Western State Hospital
Staunton, Va. A 1952
- JOEL, Walther (Ph.D.)
1742 Silverwood Terr.
Los Angeles 26, Calif. A 1946
F 1950
- JOHNSON, Lawrence J.
7 E. Pearl Street
Danbury, Conn. A 1953
- JOHNSON, Richard B.
252 E. 61st Street
New York 21, N. Y. A 1953
- JOHNSON, Theresa
229 S. Maple Drive
Beverly Hills, Calif. A 1949
- JOSEPH, Alice (M.D.)
Garrison-on-Hudson
New York A 1944
- JOSEY, William E.
3715 Farbar Street
Houston, Texas A 1949
- *JUNKEN, Elizabeth M. (Ph.D.)
468 Lydecker Street
Englewood, N. J. A 1940
- KABACK, Goldie R. (Ph.D.)
375 Riverside Drive
New York 25, N. Y. A 1950
- KADINSKY, D.
8 P. Smolenski Street
Tel Aviv, Israel A 1946
- KADIS, Mrs. Asya L.
1060 Park Avenue
New York 28, N. Y. A 1944
- KAHN, David F. (Ph.D.)
Lexington School for Deaf
904 Lexington Avenue
New York 21, N. Y. A 1953
- KAHN, Robert
Department of Psychology
Penna. State Univ. St. Aff.
University Park, Pa. 1955
- KAHN, Maj. Theodore C. (Ph.D.)
2750 USAF Hospital
Wright-Patterson
AF Base, Ohio A 1953
F 1954
- KALANT, Mrs. Lee
4941 Coronet Street
Montreal 26, Canada A 1954
- KALINKOWITZ, Bernard N.
Graduate School of
Arts and Science
New York University
Washington Square
New York, N. Y. A 1954
- KAPIT, Milton E.
1 W. 85th Street
New York 21, N. Y. A 1950
- KAPLAN, Herbert
Patricia Avenue
Fishkill, N. Y. A 1949
- KAPLAN, Norman (Ph.D.)
2117 "E" Street, N.W.
Washington 7, D.C. A 1949
- KASS, Walter (Ph.D.)
Menninger Foundation
Topeka, Kans. F 1955
- KATES, Solis L. (Ph.D.)
University of Massachusetts
Amherst, Mass. A 1949
- KATZ, Mrs. Florine
88 Central Park West
New York 23, N. Y. A 1953
- KATZ, Mrs. Harriet
190 Riverside Drive
New York 24, N. Y. A 1950
- KAUFMANN, Elizabeth M.
414 W. 121st Street
New York 27, N. Y. A 1950
- KAVKEWITZ, Henry (Ph.D.)
1060 Union Street
Brooklyn 25, N. Y. A 1955
- *KELLEY, Douglas M. (M.D.)
44 Highgate Road
Berkeley 7, Calif. F 1940
- KELLMAN, Samuel
17606 Prairie
Detroit 21, Mich. A 1949
- KELSEY, Howard Phelps
1252 Fourth Street
Sarasota, Fla. A 1944
- *KEMPLE, Camilla
20 W. 86th Street
New York, N. Y. A 1940
F 1946
- KENDIG, Isabelle V. (Ph.D.)
Ashton, Md. A 1944
F 1946
- KESSLER, Mabel G. (Ph.D.)
Montgomery County
Public Schools
Court House
Norristown, Pa. A 1952
- KEW, Clifton E.
30 Fifth Avenue
New York 11, N. Y. A 1949
- KIDORF, Irwin W.
6 Preston Court
Lexington, Ky. St. Aff. 1955
- KING, Francis W. (Ph.D.)
Office of Student Counseling
Dartmouth College
Hanover, N. H. A 1952
- KINGSLEY, Leonard
Walter Reed Army Hospital
Wash. 12, D.C. St. Aff. 1954
- KIRK, Virginia (Ph.D.)
Vanderbilt University
School of Medicine
Nashville 5, Tenn. A 1944
- KITAY, Philip M. (Ph.D.)
8707-35th Avenue
Jackson Heights 72, N. Y. A 1955
- KLASS, Walter K. (Ph.D.)
146 N. Sleight Street
Naperville, Ill. A 1946
- KLATSKIN, Ethelyn H. (Ph.D.)
Yale University
Child Study Center
14 Davenport Ave.
New Haven 11, Conn. A 1946
F 1955

- KLEIN, Abraham
433 W. 21st Street
New York 11, N. Y. A 1955
- *KLEIN, Eva L. (M.D.)
1148 Fifth Avenue
New York 28, N. Y. A 1940
- KLEINBERG, Mrs. Rosalyn K.
6807 N. 10th Street
Philadelphia 26, Pa. A 1950
- *KLOPFER, Bruno (Ph.D.)
Box 2971
Carmel, Calif. F 1940
- KLOPFER, Walter G. (Ph.D.)
Norfolk State Hospital
Norfolk, Nebr. A 1946
F 1951
- KOGAN, Kate L. (Ph.D.)
6034-44th Ave., N.E.
Seattle 5, Wash. A 1941
F 1944
- KOGAN, William S. (Ph.D.)
6034 44th Avenue, N.E.
Seattle 5, Wash. A 1941
- KORDA, Mrs. Geraldine J.
80 S. Parkway Avenue
Pasadena 10, Calif. A 1949
- KORNER, Anneliese F. (Ph.D.)
2255 Post Street
San Francisco 15, Calif. F 1953
- KORNREICH, Melvin (Ph.D.)
147-10-84th Road
Jamaica 35, N. Y. A 1951
- KOTKOV, Benjamin (Ph.D.)
422 Nelson Drive
Jacksonville, N. C. A 1949
- *KRAFFT, Mrs. Margaret R.
172 E. 91st Street
New York 28, N. Y. A 1940
- KRAL, V. Adalbert (M.D.)
1849 Lincoln Avenue
Montreal, Que., Can. A 1953
- KRASNER, Leonard (Ph.D.)
Clinical Psychology Service
Veterans Hospital
Lexington, Ky. A 1952
- KRECZKOWSKI, Joseph
729 Carson Street
Pittsburgh 3, Pa. A 1944
- KROUT, Maurice H. (Ph.D.)
6838 S. Normal Blvd.
Chicago 21, Ill. A 1950
- KRUGMAN, Dorothy C. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1944
- KRUGMAN, Herbert E. (Ph.D.)
425 Riverside Drive
New York 25, N. Y. A 1943
- KRUGMAN, Judith I. (Ph.D.)
100 Remsen Street
Brooklyn 1, N. Y. A 1941
- *KRUGMAN, Morris (Ph.D.)
Board of Education
110 Livingston Street
Brooklyn 1, N. Y. F 1940
- KUTASH, Samuel B. (Ph.D.)
3 Park Road
Maplewood, N. J. A 1950
F 1951
- LAKIN, Harriet A.
1959 S. Crescent Heights
Los Angeles 34, Calif. A 1950
- LAMPL, Henry M.
94 Fairmont Avenue
Kingston, N. Y. A 1955
- LANDISBERG, Selma
204 W. 88th Street
New York 24, N. Y. A 1950
- LASKOWITZ, David
1299 Grand Concourse
New York 52, N. Y. A 1953
- LAWRENCE, Ernest S. (Ph.D.)
240 S. La Cienega Blvd.
Beverly Hills, Calif. A 1955
- LAWRENCE, James F. (Ph.D.)
Vet. Adm. Hospital
Brocton, Mass. A 1949
F 1954
- LAWRENSON, Thomas J.
13-D Yale Street
Nutley, N. J. A 1955
- LEBEAUX, Mrs. Thelma W.
106 Newton Avenue N.
Worcester 9, Mass. A 1944
- LEDER, Ruth
301 E. 21st Street
New York 10, N. Y. A 1950
- LEDWITH, Nettie H. (Ph.D.)
Pittsburgh Child Guid. Center
DeSoto Street
Pittsburgh 13, Pa. A 1948
F 1952
- LEE, Dorothy B.
33-33 82nd Street
Jackson Heights 72, N. Y. A 1950
- LEHMANN, Heinz E. (M.D.)
Verdun Protestant Hospital
Box 6034
Montreal, Que., Can. A 1943
F 1951
- JEHRER, Ruth (Ph.D.)
Woodside Receiving Hospital
800 E. Indianola Ave.
Youngstown 8, Ohio A 1944
F 1954
- LEONARD, A. T.
703 Madison Avenue, S.E.
Grand Rapids, Mich. A 1954
- LEOPOLD, Julius
104-29 117th St. St. Aff. 1953
Richmond Hills 19, N. Y.
- LEVENSTEIN, Mrs. Phyllis
67-33 Kissena Boulevard
Flushing, L. I., N. Y. A 1948
- LEVI, Joseph (Ph.D.)
50 W. 72nd Street
New York 23, N. Y. A 1947
F 1954
- LEVINE, Abraham (Ph.D.)
2354 Paulding Avenue
Bronx 69, N. Y. A 1952
- LEVINE, Mrs. Phyllis R.
1587 Coventry Road
East Cleveland, Ohio A 1953
- LEVINGER, Leah
Jewish Board of Guardians
228 E. 19th Street
New York 3, N. Y. A 1952
- LEVINSON, Boris M. (Ph.D.)
39-25 47th Street
Sunnyside, L. I. C. 4, N. Y. A 1952
- LEVIT, Dr. Herbert I.
Dixmont State Hospital
Greenfield, Pa. A 1954
- LEVY, Ruth Jacobs (Ph.D.)
3018 E. 125th Street
Seattle 55, Wash. A 1948
F 1951
- LEWIN, Herbert S. (Ph.D.)
884 West End Avenue
New York, N. Y. A 1951
F 1954
- LEWIS, Robert T. (Ph.D.)
1948 Lupin Avenue
Monterey Park, Calif. A 1953
- LIBRESCO, Emile
R.D. 1, Box 14
Pound Ridge, N. Y. A 1952
- LIEBEN, Mrs. Beatrice
285 Fountain Road
Englewood, N. J. A 1953
- LITTLE, Jack F. (Ph.D.)
1051 Excelsior Avenue
Oakland 10, Calif. A 1949
- LOCKWOOD, Wallace V. (Ph.D.)
2548 Fifth Avenue
San Diego 3, Calif. A 1949
- LOEHRKE, Leah M. (Ph.D.)
Veterans Administration
12227 Clifton Blvd.
Lakewood, Ohio A 1954
- LOLIS, Kathleen
275 Clinton Avenue
Brooklyn 5, N. Y. A 1949
- LONGLEY, James L.
Industrial Psychology Division
The Detroit Edison Company
2000 Second Avenue
Detroit 26, Mich. A 1953
- LONSTEIN, Murray (Ph.D.)
Veterans Administration Hosp.
Leech Farm Road
Pittsburgh 6, Pa. A 1953
- *LOPES, Jose Leme (M.D.)
Rua Martins Ferreira 75
Rio de Janeiro, Brazil F 1940
- LORD, Edith (Ph.D.)
American Embassy
APO 843, c/o Postmaster
New York, N. Y. A 1953
- LOW, Howard
Department of Psychology
Penn State University
State College, Pa. A 1954
- LUCAS, Winifred B. (Ph.D.)
7139 Hollywood Blvd.
Los Angeles 46, Calif. A 1951
- LUNDIN, William (Ph.D.)
Chicago State Hospital
6500 Irving Park Road
Chicago 34, Ill. A 1954
- LUSSIER, Andre
39 W. Boulevard Gouin
Montreal, Que., Can. A 1951
- MacBRIDE, John L.
12340 Tuller
Detroit 4, Mich. A 1955
- MacDONALD, D. Stewart (Ph.D.)
Child Guidance Center
1517 "H" Street
Lincoln, Nebr. A 1950
- MACHOVER, Mrs. Karen
200 Fenimore Street
Brooklyn 25, N. Y. A 1947
F 1948
- MACHOVER, Solomon (Ph.D.)
200 Fenimore Street
Brooklyn 25, N. Y. F 1948
- MAHLER, Paul H. (Ph.D.)
102 W. 80th Street
New York 24, N. Y. A 1949
- MAHRER, Alvin R. (Ph.D.)
1st Lt., MSC, USA
Box 336, OMS
Fitzsimons Army Hospital
Denver, Colo. A 1955
- MAITI, Prof. Haripada P.
Director, Institute of
Child Development
Ahmedabad 9, India A 1952
- MALLINGER, Betty R. (Ph.D.)
600 S. Negley Avenue
Pittsburgh 32, Pa. A 1952
- MALLOY, Mrs. Helga
35 Church Hill
Montreal 6, Quebec
Canada A 1943
- MALM, Mrs. Mildred
11423 E. Hallwood Drive
El Monte, Calif. A 1949
- MALONE, Anne
Department of Psychiatry
Montreal General Hospital
Montreal, P. Quebec
Canada St. Aff. 1954
- *MANN, Mrs. Edna B.
215 W. 98th Street
New York 25, N. Y. F 1940
- MANSON, Morse P. (Ph.D.)
10655 Santa Monica Blvd.
Los Angeles 25, Calif. A 1950
- MANUILOW, Tatiana
16, Cote Street
Catherine Road
Montreal, Que., Can. A 1954

- MARGOLIS, Mrs. Muriel F.
390 Terrace Avenue A 1949
Garden City, L. I., N. Y.
- MARKER, Mrs. Beatrice W.
2131 Delancey Place
Philadelphia 3, Pa. A 1951
- MARKHAM, Mrs. Sylvia
116 E. 68th Street
New York 21, N. Y. A 1954
- MARSH, James T. (Ph.D.)
Department of Psychiatry
University of California
Medical School
Los Angeles 24, Calif. A 1955
- MATHER, Elise D.
5260 W. Chicago
Detroit 4, Mich. A 1948
- MATHEWS, W. Mason (Ph.D.)
Merrill-Palmer School
71 Ferry Avenue, E. A 1949
Detroit 2, Mich. F 1955
- MATHIAS, Rudolf (Ph.D.)
321 S. Midvale Boulevard
Madison, Wisc. A 1950
- MATLI, Elsie D.
2042 Hyde Street St. Aff. 1954
San Francisco, Calif.
- MAZURKIEWICZ, Joseph F.
Psychological Clinic
4 Burrows Building
Penna. State Univ. St. Aff.
University Park, Pa. 1955
- *MCBRIDE, Katharine E. (Ph.D.)
Bryn Mawr College
Bryn Mawr, Pa. A 1940
- McCARY, James Leslie (Ph.D.)
5101 Alameda at Southmore
Houston, Texas A 1948
- McCLOSKEY, Mrs. E.
Venita Amsler
5515 Wissahickon Avenue
Philadelphia 44, Pa. A 1948
- McDONALD, Franklin R.
3700 Cherrywood Ave. (Ph.D.)
Los Angeles 18, Calif. A 1952
- McNEILL, Harry V. (Ph.D.)
125 E. 26th Street
New York 10, N. Y. F 1951
- McPHERSON, Marion W.
The Neuro-Psychiatric (Ph.D.)
Clinic of St. Louis
457 N. Kingsway
St. Louis 8, Mo. A 1953
- MEHR, Helen Margulies (Ph.D.)
498 McArthur Avenue
San Jose, Calif. A 1941
F 1949
- MERCER, Margaret (Ph.D.)
St. Elizabeths Hospital
Washington, D.C. A 1946
F 1950
- MEYER, George (Ph.D.)
2479 16th Avenue
San Francisco, Calif. A 1950
- *MEYER, Mortimer M. (Ph.D.)
503 N. Bronson Avenue
Los Angeles 4, Calif. F 1949
- *MALE, Mrs. Florence
860 Riverside Drive
New York, N. Y. F 1940
- MICHAL-SMITH, Harold
1230 Park Avenue (Ph.D.)
New York 28, N. Y. F 1955
- MILLER, Carmen (Ph.D.)
5935 Colhurst
Dallas, Texas A 1951
F 1955
- MILLER, Cecil R.
1762 Malcolm Avenue
Los Angeles 24 St. Aff. 1953
California A 1955
- MILLER, Christine (Ph.D.)
973 Keeler Avenue
Berkeley 8, Calif. A 1955
- MILSTEIN, Dr. A. Freda
9595 Greenview
Detroit 28, Mich. A 1946
- MIMS, Mrs. Jean Giesey
1110 E. 32nd Street
Austin, Texas A 1943
- MINDESS, Harvey (Ph.D.)
Balgrist Strasse 82
Zurich, Switzerland A 1953
- MINDLIN, Mrs. Dorothee F.
1820 Clydesdale Place, N.W.
Washington 9, D.C. A 1955
- MOLISH, CDR Herman B.
MSC, USNR
Naval Medical Center Staff
Bethesda, Md. A 1950
- MONTALTO, Fannie D. (Ph.D.)
2654 Fourth Avenue
San Diego 3, Calif. A 1952
- MOORE, Mrs. Harriet Bruce
145 E. Ohio Street
Chicago 11, Ill. A 1953
- MORELAND, Mrs. Margaret E.
Kirkwood Drive
Grand Island, N. Y. A 1950
- MORF, Gustave (M.D.)
1410 Fayolle Avenue
Montreal 19, Quebec
Canada A 1954
- MORGAN, Clellen L. (Ph.D.)
R.D. No. 20, Beatty Road
Media, Pa. A 1950
- MORGAN, David W. (M.D.)
127 N. Madison Avenue
Pasadena 1, Calif. A 1943
- MORGAN, Olive J. (Ph.D.)
R.D. No. 20, Beatty Road
Media, Pa. A 1950
- MORIZE, Mrs. Andre
4, Rue Jean-du-Bellay
Paris 4^e, France A 1945
- MORROW, J. Lloyd (M.D.)
197 Passaic Avenue
Passaic, N. J. A 1943
- MOITZ, Dr. Gerald
731 Western
Topeka, Kans. A 1954
- MUELLER, Adolph R. (M.D.)
516 S. Fifth Street
Leavenworth, Kans. A 1943
- MUELLER, Mrs. Agnes
Low Road Farm
Sharon, Conn. A 1951
- MUENCH, George (Ph.D.)
San Jose State College
San Jose, Calif. A 1946
- MULLEN, Miss Esther
10 Downing Street
New York 14, N. Y. A 1950
- *MUNROE, Ruth L. (Ph.D.)
239 Central Park West
New York 24, N. Y. F 1940
- MUNZ, Adam
67-30 Clyde Street
Forest Hills, L. I., N. Y. A 1955
- MURPHY, Rev. Kenneth
26 S. Center Street
Springfield, Ohio Aff. 1954
- MURPHY, Lois Barclay (Ph.D.)
Menninger Foundation
Topeka, Kans. A 1941
- MURRAY, Henry (M.D.)
48 Mt. Auburn Street
Cambridge 38, Mass. A 1948
F 1950
- NAGELBERG, Leo (Ph.D.)
3900 Greystone Avenue
New York 63, N. Y. A 1952
- NAPOLI, Peter J. (Ed.D.)
Crompond Road
R.F.D. 2
Yorktown Heights, N. Y. A 1949
- NEU, Ruth A. Warburg
311 E. 72nd Street
New York 21, N. Y. A 1953
- NEUMAN, Gerard G. (Ph.D.)
3374 Pioneer Street
Salt Lake City 6, Utah A 1955
- NEWMAN, Joseph (Ph.D.)
University Drive
Pittsburgh 40, Pa. A 1950
- NICHOLAS, Alma L.
200 Retreat Avenue
Hartford 2, Conn. A 1954
- NIKEL, Frank
980 Cherry Street
Phoenixville, Pa. A 1948
- NORTHCOFF, Hollie
697 Dolores Street
San Francisco 10, Calif. A 1954
- NOSAL, Walter S. (Ed.D.)
John Carroll University
Cleveland 18, Ohio A 1954
- NUNEZ, Rafael (Ph.D.)
Instituto de Psicologia
Universidad Nacional
Bogota, Colombia A 1954
- OCHROCH, Ruth
656 W. 162nd Street
New York 32, N. Y. A 1950
- ODERBERG, Lt. Phillip
903 S. 11th Street
Tacoma, Wash. A 1954
- ODOM, Charles L. (Ph.D.)
602 Carondelet Building
New Orleans 12, La. A 1949
- OETTINGER, Mrs. Malcolm
160 Mt. Vernon Street
Boston, Mass. A 1945
- OLINGER, Leonard Bennett
9952 Santa Monica Blvd. (Ph.D.)
Beverly Hills, Calif. A 1954
- ORGEL, Sidney A.
Drawer 508
Norwich State Hospital
Norwich, Conn. A 1952
- OSSORIO, Abel Garcia (Ph.D.)
Department of Psychology
Washington University
St. Louis, Mo. A 1951
- PALM, Rose (Ph.D.)
263 West End Avenue
New York 23, N. Y. F 1955
- PAPANIA, Ned
13244 N. Norfolk
Detroit 35, Mich. A 1954
- PARNICKY, Joseph J.
School of Social Work
Rutgers University
New Brunswick, N. J. A 1949
- PARSONS, Rosa F.
3319 Columbia Street
San Diego 1, Calif. A 1947
- *PAULSEN, Alma A. (Ph.D.)
433 W. 21st Street
New York 11, N. Y. F 1940
- PAYNE, David H. (Ph.D.)
8345 Talbert Avenue
Huntington Beach, Calif. A 1950
- PEAK, Horace M.
Psychology Department
Patton State Hospital
Patton, Calif. A 1949
- PEIXOTTO, Helen E. (Ph.D.)
Child Center
Catholic University of America
Washington, D.C. F 1955
- PEMBERTON, W. H. (Ed.D.)
481 Summit Avenue
Mill Valley, Calif. A 1941
- PENA, Cesario D. (Ph.D.)
South Street
Williamsburg, Mass. A 1951

- PENNINGROTH, Paul W. (Ph.D.)
1520 River Bluff Rd. A 1943
Jacksonville 11, Fla.
- PETERS, Marie Wilson A 1947
6144 Wayne Avenue
Philadelphia 44, Pa. F 1951
- PHILLIPS, Mrs. Allvertha B. A 1950
3561 N. Pennsylvania Street
Indianapolis 5, Ind.
- *PIOTROWSKI, Zygmunt A. (Ph.D.)
Box 1000 F 1940
Princeton, N. J.
- PLATT, Henry (Ph.D.) A 1950
5 Eisenhower Drive
Malvern, Willistown, Pa.
- PLITTMAN, Jack C. A 1951
Psychology Department
Patton State Hospital
San Bernardino, Calif.
- PORTER, Mrs. Lucille S. St. Aff. 1953
278 First Avenue
New York 9, N. Y.
- POSER, Ernest George (Ph.D.)
Department of Psychology
McGill University
3600 McTavish Street A 1950
Montreal, P.Q., Canada F 1953
- PRADOS, Miguel (M.D.)
McGill University
3801 University Street A 1942
Montreal, Que., Can.
- PRICE, Marian Gale A 1953
854 S. Euclid
Pasadena 5, Calif.
- PROCTOR, Paul W. (Ph.D.) A 1951
315 W. 106th Street
New York 25, N. Y.
- PUZZO, Frank S. A 1949
130-52 232nd Street
Laurelton, N. Y.
- QUAYLE, Margaret S. (Ph.D.) A 1950
27 Parkview
Tuscaloosa, Ala. F 1952
- RABIN, Albert I. (Ph.D.) F 1955
Department of Psychology
Michigan State University
East Lansing, Mich.
- RABINOVITCH, M. Sam A 1955
Department of Psychology
Montreal Children's Hospital
Montreal 25, Canada
- RADTKE, William L. A 1954
University Guidance Center
University of Miami
Coral Gables 46, Fla.
- *RAPAPORT, David (Ph.D.) F 1940
Austen Riggs Center
Stockbridge, Mass.
- RAPKIN, Maurice (Ph.D.) A 1952
800 S. Robertson Blvd.
Los Angeles 35, Calif.
- RAPPAPORT, Sheldon R. (Ph.D.) A 1951
290 Linden Lane
Merion, Pa.
- RAPPAPORT, Sidney M. (Ph.D.) A 1949
Lakeside Apartments
Melrose Park 26, Pa. F 1955
- RAUB, Edwin S. (Ed.D.) A 1952
141 Fairfax Road
Rosemont, Pa.
- RECORD, Father Maurice A. A 1954
Assumption College
Windsor, Ont., Can.
- REED, Philip B. (M.D.) A 1949
1820 E. Tenth Street
Indianapolis 13, Ind.
- REICHARD, Suzanne (Ph.D.) A 1941
1075 Cragmont Avenue
Berkeley, Calif.
- REICHENBERG-HACKETT, Wally (Ph.D.)
c/o Department of Psychology
College Station
Duke University
Durham, N. C. A 1948
- REINTHAL, Mrs. Mary E. A 1951
3341 Medina Line Road
West Richfield, Ohio
- REIS, Walter J. (Ph.D.) (M.D.) A 1943
USPH Service Hospital
Norfolk, Va.
- REISEL, Jerome A 1955
8603 Rugby Drive
Los Angeles 46, Calif.
- REISS, William J. (Ph.D.) A 1955
Guidance Center of
Hillsborough County
W. B. Henderson School
Tampa 2, Fla.
- REITZ, Mrs. Edna Maisner A 1953
4011 Tuxedo
Detroit 4, Mich.
- REITZELL, Mrs. Jeanne M. A 1949
500 S. Arroyo Boulevard
Pasadena 2, Calif.
- RIBEIRO, Dr. Rene A 1951
Rua Henrique Dias 271
Recife
Pernambuco, Brazil
- RICHARDS, T. W. (Ph.D.) A 1942
Dept. of Neuropsychiatry
Louisiana State University
School of Medicine F 1954
New Orleans 12, La.
- *RICKERS-OVSIANKINA, M. (Ph.D.) F 1940
Univ. of Connecticut
Storrs, Conn.
- RISCH, Frank (Ph.D.) A 1949
10722 1/2 Francis Place
Los Angeles 34, Calif.
- RITCHEY, Hardin (M.D.) A 1953
3015 Seventh Avenue, S.
Birmingham, Ala.
- *RITEY, Hector J. (M.D.) A 1940
815 Park Avenue
New York 21, N. Y.
- *RIVERS, Mrs. Hubert M. A 1940
111 Mitchell Drive
Pittsburgh 28, Pa.
- ROBINSON, Elizabeth Foster A 1954
Central Child Guidance Service
101 Bradley Memorial
University Hospitals
Madison, Wisc.
- ROCKBERGER, Harry (Ph.D.) A 1954
50 S. Munn Avenue
East Orange, N. J.
- RODAN, Mrs. Henrietta Itta St. Aff. 1954
515 E. 85th Street
New York 28, N. Y.
- ROGERS, Lawrence S. (Ph.D.) A 1949
1046 Madison Street
Denver 6, Colo. F 1954
- RORSCHACH, Mme. Olga H. M. 1954
Hirschgartenweg
Zurich 57, Switzerland
- ROSEN, Anna A 1955
5856 Larchwood Avenue
Philadelphia 43, Pa.
- ROSEN, Esther Katz (Ph.D.) A 1945
1810 Rittenhouse Sq.
Philadelphia 3, Pa. F 1951
- ROSENBERG, Israel H. A 1953
89-38 Whitney Avenue
Elmhurst 73, L. I., N. Y.
- ROSENTHAL, Robert St. Aff. 1955
713 N. Kingsley Drive
Los Angeles 29, Calif.
- ROSNER, Stanley A 1954
840 Bronx River Road
Bronxville, N. Y.
- ROSS, M. Eleanor (Ph.D.)
Tri-County Mental
Health Clinics A 1944
Norristown, Pa. F 1949
- *ROSS, W. Donald (M.D.)
Department of Psychiatry
Cincinnati General Hospital
Cincinnati 29, Ohio F 1940
- ROTMAN, Saul R. (Ph.D.) A 1947
Veterans Adm. Hospital
Summit, N. Y.
- RUHL, Mrs. R. Ernest A 1947
817 Chestnut Street
Millinburg, Pa.
- RUJA, David H. (Ph.D.) A 1949
954 N. Vermont Avenue
Los Angeles 29, Calif.
- RUSSELL, Howard A 1954
9426 S. Van Ness Avenue
Los Angeles 47, Calif.
- *RYMER, Charles A. (M.D.) F 1940
Colorado Psychopathic Hosp.
4200 E. 9th Avenue
Denver, Colo.
- ST. CLAIR, Walter F. (Ed.D.) A 1943
999 Mammoth Road
Manchester, N. H.
- SALTZMAN, Marguerite R. A 1950
2533 S. 21st Street
Philadelphia 45, Pa.
- SALTZMAN, Sara A 1950
7012 Wilson Lane
Bethesda 14, Md.
- SALZMAN, Mrs. Anne A 1953
12548 Everglade Street
Los Angeles 66, Calif.
- SANDER, Emilie T. A 1950
657 W. 161st Street
New York, N. Y.
- SANDERSON, Herbert (Ph.D.) A 1952
Jewish Family Service
10 N.E. 3rd Avenue
Miami 32, Fla.
- SANFORD, R. Nevitt (Ph.D.) A 1948
Department of Psychology
Univ. of California
Berkeley, Calif. F 1950
- SARASON, Mrs. Esther K. A 1944
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn.
- SARASON, Seymour B. (Ph.D.) A 1944
Institute of Human Relations
Yale University
333 Cedar Street
New Haven, Conn.
- SARGENT, Helen D. (Ph.D.) A 1945
2025 Westwood Drive
Topeka, Kans. F 1950
- SCALES, Margaret B. (Ph.D.) A 1955
306 Sage Road
Louisville, Ky.
- SCHACHT, Mrs. Leatrice Styrt A 1950
5 Avis Drive
New Rochelle, N. Y.
- SCHACHTEL, Ernest G. F 1951
299 Riverside Drive
New York 25, N. Y.
- SCHACHTEL, Mrs. Zeborah A 1953
299 Riverside Drive
New York 25, N. Y.
- SCHAFER, Roy (Ph.D.) A 1953
School of Medicine
Yale University
333 Cedar Street
New Haven, Conn. F 1955
- SCHANBERGER, William J. A 1954
305 Veri Avenue
Pittsburgh 20, Pa.

- SCHATTMAN, Mrs. Esther
Preger
210 E. 68th Street
New York 21, N. Y. A 1950
- SCHER, Sam C. (Ph.D.)
2001 Broadway
Galveston, Texas A 1956
- SCHERER, I. W. (Ph.D.)
Veterans Administration
Northampton, Mass. A 1949
- SCHILLINGER, Morton
670 West End Avenue
New York 25, N. Y. A 1953
- *SCHLESINGER, Mrs. Alicia de
Solis 155, VIII/A A 1940
Buenos Aires, Argentina
- SCHMIDL, Fritz (M.S., Dr. Jur.)
539 32nd Avenue, S. A 1942
Seattle 44, Wash. F 1945
- SCHNEIDER, Stanley F. (Ph.D.)
Neuropsychiatric Institute
University Hospital
Ann Arbor, Mich. A 1954
- SCHONBAR, Rosalea Ann
3382 171st Street (Ph.D.)
Flushing 58, N. Y. A 1943
- SCHUBERT, Herman J. P.
Route No. 2 (Ph.D.)
Williamsville 21, N. Y. A 1950
- SCHULMAN, Doris
10 Downing Street
New York 14, N. Y. A 1948
- SCHULMAN, Irving (Ph.D.)
100 Charles Drive
Bryn Mawr, Pa. A 1952
- SCHUMACHER, Audrey Sims
400 Kentucky Ave. (Ph.D.)
Berkeley, Calif. A 1941 F 1949
- SCHUMACHER, Henry C.
400 Kentucky Avenue (M.D.)
Berkeley, Calif. A 1941
- SCHUPPER, Fabian X.
c/o Goldman
22 E. 60th Street
New York, N. Y. A 1954
- SCHWARTZ, Arthur A.
251 Central Park West
New York 24, N. Y. A 1951
- SCHWARTZ, Emanuel K.
12 E. 87th St. (Ph.D., D.S. Sc.)
New York 28 A 1949
New York F 1952
- SCHWERIN, Mrs. Erna
2000 Shawnee Boulevard
Lima, Ohio A 1950
- SEIDENFELD, Morton A. (Ph.D.)
National Foundation for
Infantile Paralysis
120 Broadway A 1944
New York 5, N. Y. F 1954
- SEILER, Mrs. Geraldine F.
The Embassy
2100 Walnut Street
Philadelphia 3, Pa. A 1946
F 1950
- SEITZMAN, Daniel
2387 Ocean Avenue
Brooklyn 29, N. Y. A 1949
- SELIG, Kalman
188 Clinton Avenue
Newark 5, N. J. A 1950
- SELTZER, Samuel M.
17 Cadet Circle
Lancaster, N. Y. A 1954
- SEYMOUR, Charlyne T. (Ph.D.)
11 69th Place
Long Beach 3, Calif. A 1952
- SHACKETTE, Mrs. Sarah Eyre
Box 166
Carmel Valley, Calif. A 1942
- SHANE, S. Gerald
4571 Sherbrooke St. A 1949
Westmount, P.O., Canada
- SHAPERO, Mrs. Amy Miller
34 Hubbard Avenue
Stamford, Conn. A 1949
- SHAPIRO, David (Ph.D.)
Austen Riggs Foundation
Stockbridge, Mass. A 1950
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c/o J. Shapiro
214 E. Broadway
New York 2, N. Y. A 1950
- SHARPE, Susie McMillan (Ph.D.)
46 W. 4th Street
Mt. Vernon, N. Y. A 1948
- SHEEHAN, Joseph (Ph.D.)
Department of Psychology
University of California
Los Angeles 24, Calif. A 1952
- SHNEIDMAN, Edwin S. (Ph.D.)
114-15 Rose Avenue A 1949
Los Angeles 34, Calif. F 1951
- SHOBEN, Edward J., Jr. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1952
- SHOR, Joel (Ph.D.)
c/o Epstein
150 E. 89th Street
New York 28, N. Y. A 1945
- SIEGEL, Edward L. (Ph.D.)
606 E. Raynor Avenue
Syracuse, N. Y. A 1950
- SIEGEL, Max (Ph.D.)
50 Kenilworth Place
Brooklyn 10, N. Y. A 1949
- SIEGEL, Miriam G. (Ph.D.)
57 E. 90th Street
New York 28, N. Y. A 1942
F 1949
- SIMKIN, James S. (Ph.D.)
489 Summit Avenue
Maplewood, N. J. A 1952
- SINGER, Roland H.
320 E. Center Street
Danville, Pa. A 1953
- SKEELS, Dell
Humanistic-Social Department
University of Washington
Seattle 15, Wash. Aff. 1954
- SLESS, Bernard
225 Upland Road
Merion, Pa. A 1952
- SMITH, Frances (Ph.D.)
5405 Oleta Street, Apt. 2
Long Beach 15, Calif. A 1955
- SMITH, Mrs. Margaret J.
Mendota State Hospital
Madison 9, Wisc. A 1950
- SMOLINSKY, Harold J. (Ph.D.)
Wernersville State Hospital
Wernersville, Pa. A 1952
- SNOWDEN, Robert F.
1380 Circle Drive
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- SNYDER, Mrs. Marguerite A.
96 Sampson Avenue
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26 W. 9th Street
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981 S. Westmoreland
Los Angeles 6, Calif. A 1946
- SOSNOFF, Mrs. Miriam
1895 Grand Concourse
New York 53, N. Y. St. Aff. 1953
A 1955
- SPANAY, Emma (Ph.D.)
Queens College
Flushing 67, N. Y. A 1949
- SPENCER, Mrs. Betty L.
813 Seventh Street
Huntington, W. Va. A 1951
- SPIEGELMAN, Marvin (Ph.D.)
c/o C. G. Jung Inst.
Gemeindestrasse 27
Zurich 32, Switzerland A 1953
- SPIN, Mrs. Lillian
500 E. 56th Street
Brooklyn 3, N. Y. A 1950
- SPINDLER, Mrs. Joan Elizabeth
5833 McLynn Avenue A 1948
Montreal 29, Quebec, Canada
- SPIRES, Alan M.
Mental Health Clinic
5 Hazen Avenue
Saint John, N.B., Canada A 1954
- SPITZER, Paul S.
P.O. Box 100
Perkins, Calif. A 1951
- STANFORD, Margaret J.
Sonoma State Hospital
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- STANTON, Mrs. Harriet
15 Livermore Road
Wellesley Hills 82, Mass. A 1942
- STAVRIANOS, Mrs. Bertha K.
823 Ingleside Place
Evanston, Ill. A 1943
- STEEN, Thomas W. (Ph.D.)
Washington Sanitarium
and Hospital, Tacoma Park
Washington 12, D.C. A 1954
- STEINER, Matilda E.
220 Brookdale Avenue
Newark 6, N. J. A 1943
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- STEINER, Meta (Ph.D.)
40-70 Hampton Street
Elmhurst 73, N. Y. A 1948
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- STEINZOR, Bernard (Ph.D.)
49 W. 96th Street
New York 25, N. Y. A 1943
- STEISEL, Ira M. (Ph.D.)
Psychiatric Clinic for Children
University of Washington
Seattle 5, Wash. A 1951
- STENDEL, Mrs. Kathleen
Glendon-Westwood Prof. Bldg.
1250 Glendon Avenue
Los Angeles 24, Calif. A 1950
- STEPHENS, Gordon M. (M.D.)
189 Kingsley Avenue
Winnipeg, Man., Can. A 1941
- STERN, Mrs. Phyllis Glaser
109 North Avenue
Fanwood, N. J. A 1952
- STERNBERG, David
3130 Brighton 7th Street
Brooklyn 35, N. Y. St. Aff. 1955
- STERNE, Spencer B.
Department of Psychology
Wayne County General Hosp.
Eloise, Mich. A 1953
- STEWART, Barbara M. (Ph.D.)
267 S. New Hampshire
Los Angeles 4, Calif. A 1949
- STONE, Irving R.
State Mental Hygiene Clinic
3525 Fourth Avenue
San Diego 3, Calif. A 1951
- *STONE, L. Joseph (Ph.D.)
Vassar College
Poughkeepsie, N. Y. A 1940
F 1951
- STONESIFER, Fred A.
208 N. Broad Street
Selinsgrove, Pa. A 1951
- STOOPS, Mrs. Wanda Rah
3258 N. New Jersey Street
Indianapolis 5, Ind. A 1949
- STOPOL, Murray S. (Ph.D.)
Hamm Memorial Psych. Clinic
611 Hamm Building
St. Paul 2, Minn. A 1953

- STOTZ, Marion
660 N.E. 34th Street
Miami, Fla. A 1953
- STRAIT, Bennett
38 N. Seventh Street
Stroudsburg, Pa. A 1950
- STRAUSS, Mrs. Elsa L.
3819 Dakota Street
Cincinnati, Ohio A 1951
- STRUTHERS, Alice Ball (Ph.D.)
2501 Palos Verdes Drive, N.
Palos Verdes Estates
California A 1949
- SULZER, Edward S.
822 Gallatin St., N.W.
Washington 11, D.C. St. Aff. 1954
- SWIFT, Joan Woodcock (Ph.D.)
5628 S. Blackstone Avenue
Chicago 37, Ill. A 1945
- SYMONDS, Percival M. (Ph.D.)
Teachers College
Columbia University
New York 27, N. Y. A 1950
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- TABIN, Johanna Krout (Ph.D.)
316 W. Barry
Chicago 14, Ill. A 1952
- TALLENT, Norman (Ph.D.)
47 Mohawk Road
Hampton, Va. A 1953
- TALLMAN, Gladys
Kent, Conn. F 1940
- TAULBEE, Earl S. (Ph.D.)
VA Mental Hygiene Clinic
Vet. Adm. Hospital
Omaha 5, Nebr. A 1953
F 1955
- TEICH, Mrs. Marianne
2040 McGraw Avenue
Bronx 62, N. Y. A 1940
- TENNEY, Edward V. (Ph.D.)
735 Holland Avenue
Fresno, Calif. A 1948
- TOLMACH, Mrs. Regina E.
16 W. 77th Street
New York 24, N. Y. A 1949
- TOLMAN, Ruth S. (Ph.D.)
345 S. Michigan Ave.
Pasadena 5, Calif. A 1949
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- TOMKINS, Silvan S. (Ph.D.)
36 College Road
Princeton, N. J. A 1948
- TOPPING, Mrs. Robert C.
355 Scarsdale Road
Tuckahoe, N. Y. A 1948
- TOWNSEND, Mrs. Marjorie M.
Plainfield, Vt. A 1949
- TRACHTMAN, Gilbert M.
1483 Shore Parkway
Brooklyn 14, N. Y. A 1954
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5027 Campanile Drive
San Diego 15, Calif. A 1953
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124 S. Lasky Drive
Beverly Hills, Calif. A 1948
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- TUFT, Carlyn M. (Ph.D.)
4613 Larchwood Avenue
Philadelphia, Pa. A 1940
- VACCARO, J. John (Ph.D.)
105-34 63rd Avenue
Forest Hills 75, N. Y. A 1951
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1725 17th Street, N.W.
Washington 9, D.C. A 1949
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Institute of Human Biology
1135 E. Catherine
Ann Arbor, Mich. A 1951
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100 Asilomar Blvd.
Pacific Grove, Calif. A 1949
- VAN WEST, Mrs. Joan
193-22 109th Avenue
Hollis, N. Y. St. Aff. 1954
- VAYHINGER, John M.
Mental Health Clinic
527 W. Colfax
South Bend 1, Ind. A 1952
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517 S. Post Oak Lane
Houston 19, Texas A 1949
- VORHAUS, David
27 W. 86th Street
New York 24, N. Y. H. M. 1954
- VORHAUS, Pauline G. (Ed.D.)
27 W. 86th Street
New York 24, N. Y. A 1941
F 1944
- WAGNER, Mazie Earle (Ph.D.)
Route 2
Williamsville 21, N. Y. A 1950
- WALKER, Robert G. (Ph.D.)
Old Main Street
Marshfield Hills, Mass. A 1952
- WALLEN, Richard W. (Ph.D.)
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Western Reserve University
Cleveland 6, Ohio A 1953
- WALTON, Mrs. Norma R.
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Lansing, Mich. A 1949
- WARNER, Samuel J. (Ph.D.)
216 E. 70th Street
New York 21, N. Y. A 1953
- WARREN, Lurene Z.
433 State
Potoskey, Mich. A 1949
- WARSHAWSKY, Mrs. Florence
2889 Torrington Road
Shaker Heights 22, Ohio A 1949
- WATERS, Thomas J.
839 Huntington Pike
Southampton (Bucks), Pa. St. Aff. 1955
- WATKINS, Roberta Frank
533 San Marino
San Marino, Calif. St. Aff. 1955
- WEINREBE, Claire
225 E. 11th Street
New York 3, N. Y. St. Aff. 1953
- WEIR, John R. (Ph.D.)
2841 Highview Avenue
Altadena, Calif. A 1954
- WEISS, Emalyn R.
733 N. 3rd Street
Reading, Pa. A 1950
- WEISS, Herman R. (Ph.D.)
1277 E. 48th Street
Brooklyn 34, N. Y. A 1953
- WEISS, Sheldon W.
520 Carbondale Road
Waymart, Pa. A 1951
- WEISSKOPF-JOELSON, Edith
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Dept. of Psychology
Purdue University
Lafayette, Ind. A 1943
F 1951
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468 Riverside Drive
New York 27, N. Y. A 1950
- WELLS, Frederick Lyman (Ph.D.)
13 Holyoke Street
Cambridge 38, Mass. H. M. 1950
- WENGATE, Pauline
Hillcrest Hospital
Andalusia, Ala. A 1950
- WENTLING, Verda M.
15 Elk Street
Hempstead, L. I., N. Y. A 1950
- WENTWORTH-ROHR, Ivan
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270 West End Avenue
New York, N. Y. A 1950
- WERNER, Kathryn
321 W. 11th Street
New York 14, N. Y. A 1952
- WERTHEIMER, Rita (Ph.D.)
Western Psychiatric Institute
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3811 O'Hara Street
Pittsburgh 13, Pa. A 1955
- WEXLER, Rochelle M.
1938 E. 12th Street
Brooklyn 29, N. Y. A 1949
- WHITE, Mrs. Helen Cecelia
1025 Worsham Drive
Whittier, Calif. A 1950
- WHITMAN, Roy M. (M.D.)
333 E. Huron Street
Chicago 11, Ill. A 1954
- WHITSELL, Leon J. (M.D.)
52 Shore View Avenue
San Francisco 21, Calif. A 1942
- WICKERSHAM, Francis Myron
U.S.P.H.S.H.
(Ph.D.)
Fort Worth Texas A 1952
- WIGDOR, Blossom T. (Ph.D.)
5580 Gatineau Avenue
Montreal, Quebec, Canada A 1949
- WILCOX, George T.
The Evergreens
R.D. 1
State College, Pa. St. Aff. 1954
- WILDE, Dr. Guido
Apartado Aereo 6651
Bogota, Colombia, S.A. A 1955
- WILKINS, Mrs. Verna M.
Mother Goose Nursery School
9500 Warren Street
Silver Springs, Md. A 1950
- WILLIAMS, Gertha (Ph.D.)
17211 Buckingham Dr.
Birmingham, Mich. A 1944
F 1949
- WILLIAMS, Helen E. (Ed.D.)
210 W. 70th Street
New York 23, N. Y. A 1950
- WILLIAMS, Mrs. Jessie M.
Griffins
Abinger Hammer
Nr. Dorking, England A 1950
- WILLIAMSON, Margaret O.
4 Bayview Place
Staten Island 4, N. Y. A 1945
- WILSON, Mary T.
P.O. Box 577
Amsterdam, N. Y. A 1944
- WITZEMAN, S. Evangeline
5021 Hawkins Road
West Richfield, Ohio (Ph.D.) A 1952
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Inhurst House
Baughurst, Nr. Basingstoke
Hants, England A 1951
- WOLF, S. Jean (Ph.D.)
220 Fifth Avenue
New York 1, N. Y. A 1944
- *WOLFSON, Mrs. Ruth
124 W. 79th Street
New York 24, N. Y. F 1940
- WOLPE, Zelda S. (Ph.D.)
152 S. Lasky Drive
Beverly Hills, Calif. A 1950
- WOLTMANN, Adolf G.
147 E. 81st Street
New York 28, N. Y. A 1949
- WOOD, Austin B. (Ph.D.)
810 E. 19th Street
Brooklyn 30, N. Y. A 1943
- WOOLF, Henrietta K.
3345 Dent Place, N.W.
Washington 7, D.C. A 1950
- WRIGHT, M. Erik (M.D.)
Department of Psychology
University of Kansas
Lawrence, Kans. A 1943
- WRIGHT, Morgan
Medical Arts Clinic
Regina, Saskatchewan, Can. A 1955

WYATT, Frederick (Ph.D.)
1027 E. Huron Street A 1948
Ann Arbor, Mich. F 1949

YUDIN, Sidney
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New York, N. Y. A 1952

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Brooklyn 25, N. Y. A 1949

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Seattle, Wash. A 1951

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Fairfield State Hospital
Newtown, Conn. F 1955

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42-05 Layton Street
Elmhurst, L. I., N. Y. A 1952

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2422 Federal
Los Angeles 64, Calif. A 1949

ZUCKER, Mrs. Luise J.
276 Riverside Drive
New York 25, N. Y. A 1945
F 1950

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Shapiro, David

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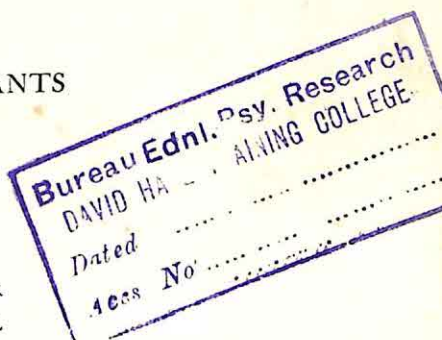
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The Clinical Validity of the Bender Gestalt Test with Children: A Developmental Comparison of Children in Need of Psychotherapy and Children Judged Well-adjusted

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PROBLEM

The Bender Gestalt test was originally conceived as a visual-motor performance test to explore gestalt functions of perception but it has become widely used throughout the country in clinics and hospitals as a part of test batteries for personality evaluation of both children and adults. Since the publication of Bender's monograph (1), research studies have been primarily concerned with the development of objective scoring systems, and problems of interpretation and validation. For the most part these studies have been concerned with adult performance. While there is general agreement on the ability of the Bender Gestalt to identify organic, mental defective, and psychotic processes, there is a lack of agreement on its validity in differentiating neurotic from normal subjects. Pascal and Suttell (15) and Hutt (13, 14) support this latter validity while the conclusions of Bellingslea (2) and Gobetz (5) are essentially negative.

Investigation of children's performance on the Bender has been relatively limited. Maturational aspects have been reported by Bender (1) and Harriman and Harriman (12). Fabian (4) found that children who show reading reversals also tend to rotate horizontally oriented Bender designs to the vertical. Fabian considered this "verticalization persistence" to be a sign of an infantile pattern of behavior. A somewhat similar conclusion was drawn by Hanvik (11) who noted that 16 out of 20 children who showed one or more rotations on the Bender had abnormal EEG records. Hanvik believed this behavior was a compensation for underlying deficiencies.

Greenbaum (7) has suggested the use of a word association test as an aid to interpreting children's associations to the test design.

Two studies have been reported that include secondary data which are relevant to the present investigation. Sullivan and Welsh (17), as part of their comparison of children who had poliomyelitis with normals, were unable to differentiate these groups on the basis of their Bender Gestalt records. Pascal and Suttell (15), in their volume on the validity and quantification for adults, report a significant difference in Bender Gestalt scores between a group of 12 child patients in a residential treatment home and 12 non-patient children. They also found a decrease in scores with an increase in age for a normal group of children between ages six and nine, corroborating the findings of Bender (1). No other studies are known to the writer that support or refute the validity of the Bender Gestalt as an instrument to evaluate personality adjustment in children.

The individual most singularly influential in the development of the Bender as a tool for evaluation of personality dynamics has been Max L. Hutt. During World War II Hutt trained some 300 Army psychologists who later passed their indoctrination in the clinical use of the test on to others. At this time he released the first detailed outline of the clinical interpretation of the test determinants (13). This outline was later revised, expanded, and definitions more explicitly formulated for publication in a widely circulated clinical reference text (14). Hutt's interpretive criteria were developed on the perform-

ance of adult subjects and are based on a theoretical framework that is primarily psychoanalytic. There have been no reported standards or validated interpretative hypotheses concerning personality dynamics developed for children on the Bender. It may be assumed, therefore, that, insofar as this test is being used as a diagnostic instrument with children, its interpretation is based primarily on formulated hypotheses from adult performance. There remains a need for validation of interpretive criteria of psychopathology in children's reproductions on the Bender Gestalt test.

This study is limited to an attempt to establish those factors of test performance which differentiate children needing psychotherapy from well-adjusted children. It is a study of empirical validity and attempts to define the test's uses and limitations in practical terms rather than identify psychological processes. With valid factors established, further exploration through clinical observation and experimentation will be necessary to determine the psychodynamic meaning of these signs.

The major assumption of this study is that personality adjustment and integration constitutes a continuum. A second assumption is that the ability of an instrument to differentiate groups of individuals along this continuum is a measure of validity of that instrument. It is further assumed that children in need of psychotherapy possess a markedly different personality structure and function from children who are judged well-adjusted. The general hypothesis set up as a guide for this study is that children in need of psychotherapy, as a group, will differ significantly in the frequencies of occurrence for each test factor from a group of children judged well-adjusted.

METHOD

Fifteen of Hutt's factors relating to test interpretation were used in this

study because of their general acceptance, reported validity, and ease of definition and scoring. Unless otherwise stated, definitions and criteria of significance for scoring followed Hutt (14). In those cases where this was not possible due to lack of clarity and omission on the part of Hutt, or obvious lack of applicability to children's records, criteria for scoring were determined empirically by the investigator, on the basis of the performance of well-adjusted 14 and 15 year old children. The test signs investigated and the objective critical scoring limits were established as follows:

1. *Placement of the first figure* was investigated in two areas on the paper. The upper middle area consisted of a rectangle, three and one-quarter by five and one-half inches, horizontally located in the center of the paper one inch from the top. This area was slightly increased from that suggested by Hutt (14) after preliminary scoring of the records revealed too few cases in any of the groups for a meaningful comparison. Hutt reports that two-thirds of "unselected" adult subjects place their first figure in this area. The second area was a two and one-quarter inch square in the extreme upper left hand corner. The size of this area was arbitrarily established to determine extreme placement which is reported to be a sign of timidity and fear (14) and would be expected to be found more in emotionally disturbed children. Only figures whose entire dimensions were in either of these areas were scored.

2. *Sequence* refers to the successive positions of the drawings as they appear on the record. The four types of sequence investigated were *orderly*, *irregular*, *overly methodical*, and *chaotic*. An orderly sequence was defined as one in which the child followed a regular succession in the placement of the figures with the exception that one inversion or change in direction was allowed. An irregular sequence was one in which more

than one change in direction was permitted but it was still possible to determine by inspection that the change was logical, such as occurs in the need for greater space. An overly methodical sequence was defined as one with forced rigidity in which all figures followed an undeviating horizontal or vertical progression. A chaotic sequence consisted of a clear lack of any plan with the figures scattered about the page.

3. *Use of space.* Excessive variability in the size of children's reproductions made the comparison of amounts of space between drawings inadequate as an indicator of use of space. Only *compressed use of space* was scored when all drawings were placed in an area of less than one complete half of the paper.

4. *Use of margin* refers to the use of the margin of the paper as a guide for placing the designs. Use of the margin was considered significant if six or more of the figures were within one-quarter-inch of any of the margins of the paper. Hutt (14) suggests the use of seven figures as a criterion.

5. *Overall change in size* was scored if five or more figures showed an increase or decrease of either the vertical or horizontal axis by more than one-quarter of the axis of the stimulus designs.

6. *Change in angulation* refers to a change in the degree of the angle of a figure or the angle of intersection between parts of a figure from that of the stimulus design. Only changes greater than 15 degrees were considered. This factor was scored when there was either an increase or decrease in angulation in four or more of the eight figures with angles, or when angulation was not reproduced or maintained in both Figures 2 and 6.

7. *Change in curvature* refers to the tendency to either accentuate or reduce curvature in curvilinear figures. It was determined by obtaining a ratio of perpendicular radii in Figure A and base-altitude ratios in

Figures 4, 5, and 6. Deviations were scored as increase when the following ratios were exceeded; Figure A, elliptical with radial axis less than 8:10; Figure 4, 1:1; Figure 5, 1:1; Figure 6, 2:1 on the horizontal curve and 1.5:1 on the vertical. Significant decrease in curvature was scored when ratios were greater than: Figure 4, 3:1; Figure 5, 9:5; Figure 6, 5:1 on the horizontal curve or 6:1 on the vertical. A change in the majority of curves on either the horizontal or the vertical was necessary to score Figure 6. Change in curvature in two or more figures was considered significant.

8. *Closure difficulty* refers to the difficulty in bringing the joining parts of a figure together and is manifest in a drawing by failure to connect, or by overlapping, lines at points of connection. The presence of closure difficulty in two or more figures was considered significant.

9. *Overlapping difficulty* refers to failure to draw, or excessive distortion or erasure of, figures in which one line crosses another. This sign was scored if it occurred in either Figure 6 or 7.

10. *Rotation* is the reproduction of a figure with a rotation of the major axis of the drawing without a change in the position of the stimulus card or paper. The rotation of any figure more than 15 degrees was considered significant.

11. *Retrogression* is defined as the substitution of the stimulus by a more primitive Gestalt form. The presence of loops, lines, or dashes for dots anywhere in the record was considered significant.

12. *Fragmentation* is the reproduction of only a part of the stimulus figure and was scored if present anywhere in the records.

13. *Elaboration* is the adding of lines not present in the stimulus and was scored when present anywhere in the record.

14. *Collision* refers to the actual overlapping or running together of two or more adjacent figures and was

scored if present anywhere in the record.

15. *Perseveration* is the persistence of drawing behavior which was appropriate for the previous figure but inappropriate for the present one. Perseveration was scored when dots replaced circles in Figure 2, loops replaced dots in Figure 3 or lines replaced dots in Figure 5.

Scoring limits for placement of first figure, use of space, use of margin, and changes in size, angulation, and curvature were indicated on clear plastic and placed directly over the records for scoring. All other factors were easily determined by inspection. The occurrence of all factors, with the exceptions of upper middle placement of the first figure and orderly sequence, are considered by Hutt (13) to be signs of psychopathology.

Subjects

Bender Gestalt records of 200 children, between ages eight and 16, who had been diagnosed as in need of psychotherapy were obtained from child guidance clinics throughout the State of Florida. There was mutual agreement between clinic staffs and adults responsible for the children as to need for treatment. The control group consisted of 200 children who were independently judged "well-adjusted" by at least two adults. These adults consisted of teachers, principals, or youth center leaders who were responsible for the supervision of the subjects many hours each week. Selection and judgment was made on the basis of a check list containing the following criteria: (a) He (or she) is able to play well with other children, (b) He has reasonable control over his emotions, (c) He is able to think for himself, (d) He is achieving somewhere near his capacity, (e) He can be depended upon, (f) He is relatively free from fears, tensions, and anxiety, (g) He is able to learn from experience, (h) He is kind and helpful to teachers and classmates, (i) He is liked and respected by his peers,

(j) He is able to show satisfaction in his own ability without being dependent on adult approval, (k) He is able to share. Each child was judged to meet at least nine of the criteria and have no gross deviation from any criterion which he failed to meet. Selection was made by the teacher or youth center leader who was asked to limit the number selected to not more than 10 percent of the child population from which they could choose. To reduce effect of halo and preconceptions, the phrase "well-adjusted" was avoided by the investigator in the selection process. The children were not aware of the basis for their selection. It was assumed that personality adjustment of children constitutes a continuum and that an attempt to obtain a group of well-adjusted children for comparison would enable a better initial test of the discriminating ability of the Bender. It was felt that this was one step better than the frequently reported "clinic-non clinic" or "neurotic-normal" comparisons.

No child with known brain damage, an obvious motor or uncorrected visual impairment, or IQ below 86 was included in either group. Gobetz (5) and Pascal and Suttell (15) found that I.Q.'s within the normal range or above and sex of the subject did not affect Bender Gestalt scores. However, because of the high ratio of approximately six boys to one girl in the group of children needing therapy, groups were matched for sex distribution at each age level.

Test Administration

The test was individually administered in both groups according to the following directions by the examiner: "I am going to show you some cards, one at a time. Each card contains some figures. I want you to copy these figures on the paper as well as you can." Drawings were limited to one side of an 8½ by 11 inch paper. All nine cards were presented in regular order. There was no time limit

and a child was free to erase or change any design. In the case of the clinic group, the test generally constituted one of a battery of diagnostic tests.

Treatment of the Data

In order to determine age levels at which the various test factors may discriminate, each group was divided into four subgroups of ages 8 and 9, 10 and 11, 12 and 13, and 14 and 15. Total frequencies for each subgroup and statistical significance of differences was determined between the clinic and the well-adjusted subgroups at each of the four age levels by means of Chi square, corrected for continuity (3, p. 86). Probabilities were computed by the direct method (3, p. 84) when frequencies of less than five were involved. A probability level of .05 or less was considered significant although some probabilities slightly above .05 are reported to provide developmental continuity.

TABLE I. A Comparison of Frequencies of Bender Gestalt Test Factors of 50 Children in Need of Psychotherapy and 50 Well-adjusted Children at Years Eight and Nine

Test Factor	Children in Need of Psychotherapy	Well-adjusted Children	P
Placement of First Figure			
Extreme Upper Left.....	7	11	....
Upper Middle.....	5	22	.01
Sequence			
Orderly.....	13	31	.01
Irregular.....	27	19	....
Overly Methodical.....	1	0	....
Chaotic.....	9	0	.01
Compressed Use of Space.....	2	4	....
Use of Margin.....	0	1	....
Overall Change in Size.....	40	41	....
Change in Angulation.....	31	35	....
Change in Curvature.....	35	14	.01
Closure Difficulty.....	47	33	.01
Rotation.....	18	7	.03
Overlapping Difficulty.....	15	6	.05
Retrogression.....	26	18	....
Fragmentation.....	1	1	....
Elaboration.....	1	0	....
Perseveration.....	1	6	....
Collision.....	11	7	....

TABLE II. A Comparison of Frequencies of Bender Gestalt Test Factors of 50 Children in Need of Psychotherapy and 50 Well-adjusted Children at Years Ten and Eleven.

Test Factor	Children in Need of Psychotherapy	Well-adjusted Children	P
Placement of First Figure			
Extreme Upper Left.....	11	8	....
Upper Middle.....	5	19	.05
Sequence			
Orderly.....	14	29	.02
Irregular.....	24	21	....
Overly Methodical.....	1	0	....
Chaotic.....	9	0	.01
Compressed Use of Space.....	4	1	....
Use of Margin.....	0	0	....
Overall Change in Size.....	39	25	.01
Change in Angulation.....	32	11	.01
Change in Curvature.....	23	12	.04
Closure Difficulty.....	43	26	.01
Rotation.....	21	4	.01
Overlapping Difficulty.....	11	3	.05
Retrogression.....	19	16	....
Fragmentation.....	2	0	....
Elaboration.....	1	0	....
Perseveration.....	3	0	....
Collision.....	11	5	....

TABLE III. A Comparison of Frequencies of Bender Gestalt Test Factors of 50 Children in Need of Psychotherapy and 50 Well-adjusted Children at Ages Twelve and Thirteen.

Test Factor	Children in Need of Psychotherapy	Well-adjusted Children	P
Placement of First Figure			
Extreme Upper Left.....	6	7	....
Upper Middle.....	10	15	....
Sequence			
Orderly.....	15	26	.04
Irregular.....	30	24	....
Overly Methodical.....	0	0	....
Chaotic.....	5	0	.06
Compressed Use of Space.....	6	4	....
Use of Margin.....	0	0	....
Overall Change in Size.....	36	19	.01
Change in Angulation.....	23	11	.03
Change in Curvature.....	17	4	.01
Closure Difficulty.....	35	20	.01
Rotation.....	19	4	.01
Overlapping Difficulty.....	0	4	....
Retrogression.....	22	15	....
Fragmentation.....	1	1	....
Elaboration.....	0	0	....
Perseveration.....	1	0	....
Collision.....	5	6	....

TABLE IV. A Comparison of Frequencies of Bender Gestalt Test Factors of 50 Children in Need of Psychotherapy and 50 Well-adjusted Children at Ages Fourteen and Fifteen.

<i>Test Factor</i>	<i>Children in Need of Psychotherapy</i>	<i>Well-adjusted Children</i>	<i>P</i>
Placement of First Figure			
Extreme Upper Left.....	15	19	....
Upper Middle.....	3	4	....
Sequence			
Orderly.....	23	36	.02
Irregular.....	20	16	....
Overly Methodical.....	0	2	....
Chaotic.....	7	0	.02
Compressed Use of Space..	4	2	....
Use of Margin.....	0	0	....
Overall Change in Size.....	36	19	.01
Change in Angulation.....	21	11	.05
Change in Curvature.....	10	3	.07
Closure Difficulty.....	38	24	.01
Rotation.....	20	1	.01
Overlapping Difficulty.....	1	0	....
Retgression.....	20	14	....
Fragmentation.....	0	2	....
Elaboration.....	1	0	....
Perseveration.....	3	1	....
Collision.....	7	0	.02

RESULTS

The data obtained are summarized in Tables I-IV. Test factors which showed significant differences between children needing psychotherapy and well-adjusted children are presented in Plate 1 with frequencies expressed as percent of occurrence.

Four test factors were found to differentiate children needing therapy from well-adjusted children at all ages from eight through 15. These were: orderly sequence, change in curvature, closure difficulty, and rotations. Two additional factors, overall change in size and angulation, occurred with significant differences at all ages above 10. Significantly more well-adjusted children up through age 11 placed their first figure in the upper center of the page but no significant differences were found for this factor at older ages. Overlapping difficulty was discriminating up through age 11 but thereafter the frequency of occurrence approached zero

in both groups at age 15.

Use of margin, compressed use of space, fragmentation, elaboration, perseveration, and collision occurred infrequently in both groups at all age levels and were not discriminating. The factor of collision, however, did discriminate between groups at ages 14 and 15. Use of margin occurred only once in all 400 subjects.

Of those factors which occurred with moderate or high frequencies, only two failed to differentiate, at all age levels, children needing therapy from well-adjusted children. These were extreme upper left placement of the first figure and retrogression. However, retrogression was present more often in the clinic group at all ages. All factors which discriminated between the groups did so in the direction predicted by Hutt's interpretive hypotheses (14), i.e., test factors considered signs of poor adjustment were more frequent among children needing therapy and positive signs were more frequent in the well-adjusted groups. Only chaotic sequence and elaboration occurred exclusively in the clinic group.

Of 60 independent statistical comparisons made in this study, 26 were significant at a probability level of .05 or less. The chance probability of obtaining this number of significant statistics is less than .001 (16).

The effect of maturation on the occurrence of Bender Gestalt test factors is indicated by the slopes of the curves in Plate 1. Inspection of these curves shows this effect to be more marked in groups of well-adjusted children.

DISCUSSION

The results of this study support the validity that the majority of test factors selected from Hutt (14) are signs of personality adjustment. They do not necessarily support the interpretative significance he has attributed to them.

This study provides a basis for exploring specific factors of test per-

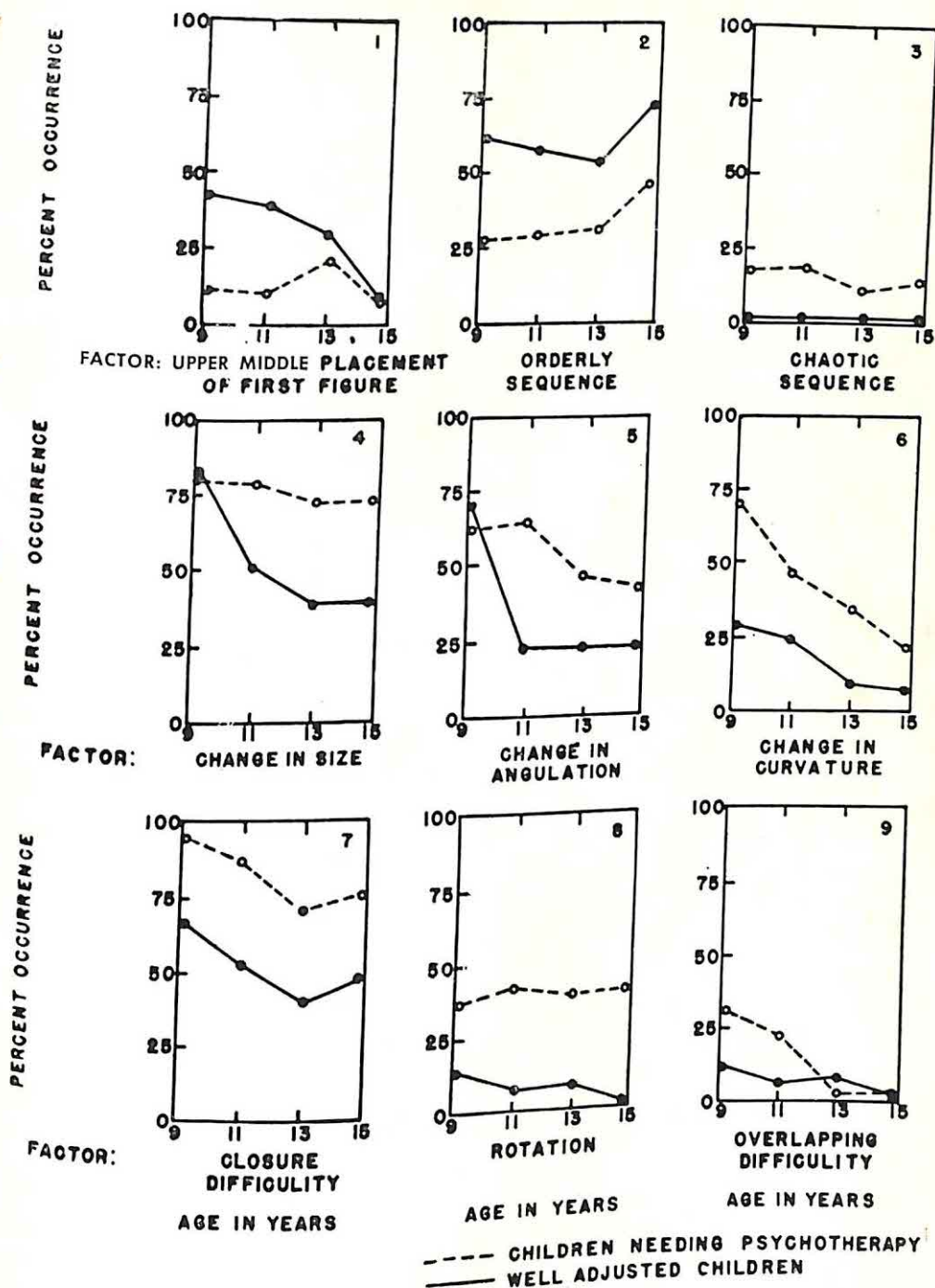


PLATE I

Factors Discriminating Children Needing Psychotherapy
From Well Adjusted Children

formance, particularly in children, for their psychodynamic implications. For example, it appears that the position of the first figure drawn would have limited diagnostic significance. Although the younger well-adjusted children tend to place the first figure in the upper-center of the paper more so than emotionally disturbed children of similar age, this tendency is not apparent at later years. There is a general tendency for older children in both groups to follow the pattern learned in writing and begin somewhere in the upper left-hand corner of the paper.

As a rule, those factors which occurred infrequently in both groups were those of more gross distortion of the designs and are considered by Hutt to be signs of psychotic processes. These factors include fragmentation, elaboration, perseveration, and collision. It remains to be demonstrated that these signs occur more frequently in psychotic children.

Inspection of the data on rotation for the clinic groups in Plate 1 shows a relative stability of occurrence at all age levels. This lack of maturational effect is quite in contrast to the control group and to most other factors. This raises the question of whether or not this may be considered additional evidence for an organic basis for this behavior as has been indicated by Bender (1), Hanvik (10), and Hanvik and Anderson (11). The frequency of occurrence of this factor in the clinic group is about half that reported by Hanvik (10). He does not provide enough information on his subjects for a valid comparison and one may only speculate that they were more seriously disturbed.

More refined investigations of rotations should be made to determine if different processes are involved between rotations of 180, 90, or less than 90 degrees; whether direction of rotation is significant; and which designs are more subject to rotation. In fact, an item analysis of all the designs seems to be indicated to determine

their relative susceptibility to distortion. Goodenough and Harris (6) point out that when children draw from models the tendency to add or omit elements in a drawing is dependent upon the level of development of the subjects and the difficulty and meaningfulness of the material. More specific information is still needed about drawing distortions which are characteristic of normal children before conclusions can be drawn concerning their meaning for the abnormal.

Another finding that invites speculation and investigation is that on retrogression (Table I-IV). This behavior involves reproducing dots by the use of loops, lines, or dashes and is considered by Bender (1) as a primitive motor expression. Although the frequencies were greater in the clinic groups they were not statistically significant and approximately one-third of the well-adjusted children demonstrated this behavior.

The maturational effect found in this study essentially agrees with the findings of Bender (1) and others (12, 15). Bender (1) was primarily concerned with the "goodness" or completeness of children's designs and found that mastery of the Gestalt principles of the figures was usually complete around the eleventh year. Study of the finer aspects of reproducing the designs can extend this evaluation of maturation at least up to the sixteenth year.

The purpose of this study was to establish significant test variables in children's Bender Gestalt records. A further word of caution is due regarding any direct clinical application of the findings in this study. It should be remembered that many of the signs appeared in both groups although not always in the same context. Of particular note is closure difficulty. At age 15, 40 percent of well-adjusted children show this behavior on two or more figures. Evaluation of a record involves far more than a listing of signs. The total test per-

formance must be considered which involves the temporal-special patterning of all the figures, the unique meaning the designs or test may have for the subject, the clinical setting, and other information and behavior known about the subject. Finally, psychodynamic interpretations of the test signs presented by Hutt and others (8, 9) must still be considered hypotheses to be tested, particularly in children.

This study provides a broader base for knowing what may be expected from emotionally disturbed as well as from emotionally healthy children on the Bender Gestalt test. It also provides additional objective data on a test well known for its subjectivity and speculative interpretation. The Bender Gestalt appears to be useful for evaluating in children as young as eight years, more than the simple ability to perceive and reproduce designs.

SUMMARY

This study was designed to establish valid scoring factors for the Bender Gestalt as it is used to evaluate personality adjustment in children. Bender Gestalt records of 200 children, ages 8 to 16 and diagnosed as needing psychotherapy, were compared to a similar age group of 200 children judged well-adjusted. Fifteen independent test factors, originally suggested by Hutt and widely used in the evaluation of adults, were objectively defined and their frequencies of occurrence determined in sub-groups of 50 children at age levels 8 and 9, 10 and 11, 12 and 13, and 14 and 15. Significance of difference between clinic and well-adjusted subgroups was determined by Chi square.

At all age levels, well-adjusted children show significantly more use of orderly sequence and less change in curvature, closure difficulty, and rotations than children needing psychotherapy. After age 10, the clinic groups show more overall change in

size and change in angulation. Frequency of upper-middle placement of the first figure drawn is significantly greater in well-adjusted children only up to year 13. Chaotic sequence is absent in this group. Emotionally disturbed children have more difficulty with overlapping figures up to age 13, thereafter, this behavior is nearly absent in both groups.

Use of margin, compressed use of space, fragmentation, elaboration, perseveration, and collision occurred infrequently in both groups and are not discriminating. Retrogression and extreme upper left placement of first figure occur with moderate frequencies but fail to discriminate.

Maturational effects on reproduction of designs are noted up to age 16. Investigation of specific psychodynamic interpretation of test factors remains to be done. Other areas for research are suggested.

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The Relation of Certain Rorschach Variables to Expression of Affect in the TAT and SCT

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The study reported herein pertains to one aspect of an investigation concerned primarily with the intra-individual consistency of responses elicited by three projective tests: the Rorschach test, the Thematic Apperception Test (TAT), and the Sentence Completion Test (SCT).

Specifically, this paper deals with the relation of selected Rorschach variables to expressions of affect inferred from the TAT and SCT. Since the meaning of responses to such stimuli as provided by the TAT and the SCT is generally more obvious than is the meaning of certain Rorschach variables, it appeared profitable to examine the relationships which might pertain between tests representing a wide range on the continuum of ambiguity.

The Rorschach variables chosen for consideration were: number of female human responses, number of male human responses, total number of human responses, total response to color (sum C), total number of Rorschach responses (R), number of anatomy responses (At), number of white space responses (S), and ratio of whole-human responses to part-human responses (H/Hd).

As is apparent in Table I, the TAT and the SCT provide stimuli assumed to elicit responses from which can be inferred the subject's attitude or feeling tone with respect to important human figures—mother, father, females, males, people, and authority figures.¹ This inferred quality of TAT

and SCT responses is herein called the "inferred affect" of a response. In terms of their classifiable nature, four fundamental qualities evolved: hostility, positive feelings, anxiety, and dependency.

The report herein pertains, therefore, to an analysis of the relationship of the chosen Rorschach variables to expressions of hostility, positive feelings, anxiety, and dependency as elicited by TAT and SCT representatives of each important interpersonal figure.

METHOD

The projective tests were administered to fifty male patients in a Mental Hygiene Clinic. Formal diagnostic classifications undoubtedly would have revealed a range from mild neurosis to that of borderline psychosis. In spite of the differences in levels of adjustment, however, all subjects were functioning with some degree of success in everyday interpersonal relationships. No attempt was made to control the group for intellectual level, age, or diagnostic classification. It was believed that these factors within any one individual would be equally rather than differentially operative in all tests. The subjects ranged in age from 24 years to 41 years, with a mean of 32. Intelligence quotients (W-B) ranged from 84 to 147, with a mean of 111.

The tests were administered in the normal course of routine psychological testing, following usual administration procedures. The entire 100 SCT items were administered to each subject, with the pertinent ones later abstracted for purposes of this research.

The inferred affect of all pertinent

¹ The Forer SCT (4) was chosen because of its systematic coverage of interpersonal relationships. The specific TAT cards were chosen on the basis of each card's applicability for assaying the interpersonal relationship under consideration.

TABLE I—Test Stimuli Pertaining to Various Interpersonal Figures

	Forer SCT	TAT
Mother	20. His earliest memory of his mother was	Picture 6 BM (Elderly woman and young man)
	35. Most mothers	
	60. My mother	
	76. When my mother came home, I	
	94. When he was with his mother, he felt	
	99. Mothers	
Father	9. His father always	Picture 7 BM (Elderly man and younger man)
	16. Most fathers	
	33. My earliest memory of my father	
	70. When my father came home, I	
	88. Whenever he was with his father, he felt	
	96. Fathers	
Females	21. When I meet a woman, I	Picture 4 (Woman clutching man's shoulders)
	26. Sisters	
	39. Most women	
	67. My first reaction to her was	
	71. As she spoke to him, he	
	81. Most women act as though	
Males	10. Men	Picture 9 BM (Men lying on grass)
	13. My first reaction to him was	
	30. Most men	
	50. Brothers	
	59. While he was speaking to me, I	
	95. Most men act as though	
People	15. His new neighbors were	Picture 2 (Farm scene)
	38. I feel that people	
	49. A lot of people	
	66. When I meet people I generally feel	
	84. Most people are	
	93. Whenever he is introduced to people, he	
Authority	23. When he met his boss he	Picture 1 (Boy and violin)
	36. Taking orders	
	73. People in authority are	
	77. When they told him what to do, he	
	91. Sometimes I feel that my boss	

responses was independently scored by two qualified clinicians. Each test was independently scored, neither judge being aware of which response belonged to any subject.

Rorschach scoring. The Rorschach tests were scored according to the procedures established by Beck (2).

TAT scoring. Prior to scoring the TAT, each story was extracted from the total record and coded so as to make later identification possible. It became obvious that a distinction had to be made between the theme's inferred affect and that of the characteristics overtly attributed to the test representative of the given interpersonal figure, since the qualities there-in were sometimes dissimilar. For ex-

ample, the theme of a TAT story involving the death of a kind, loving person would be scored *hostility*, in contrast to the score based on the characteristics overtly attributed to the figure.

Overtly attributed characteristics (TAT-overt) were classified into two categories: positive feelings (P.F.) and hostility.

The following criteria provided a basis for scoring TAT themes. These criteria pertain only to the quality inferred from the theme and are thus independent of the described characteristics of the person or persons in any TAT production:

Hostility

1. Pressure from partner or peer—prohibit-

ing, compelling, punishing, quarreling, interfering.

2. Physical harm inflicted by peer or partner.

3. Physical harm inflicted to peer or partner.

4. Death or illness of peer or partner.

5. Disappointment in peer or partner.

6. Bad news to peer or partner.

7. Degradation or depreciation of peer or partner.

8. Departure—when they suggest conflicting goals, desire of hero to get away.

Dependency

1. Succor from peer or partner—seeking or receiving aid, advice, consolation, etc.

2. Nurture—bestowing aid, support, care.

3. Filial obligation—when duty and dependency predominate. If obligation implies hostility, this latter quality may predominate.

4. Departure—when departure is seen by hero as necessary to “becoming a man,” etc.

5. Rebellion against authority, domination, dependency—when strivings for independence seem greater than hostile element.

Anxiety

1. Concern over the future, outcome of situation.

2. Fear of what will happen, fear of the unknown.

3. Decision—where a difficult choice is posed.

4. Occupational concern.

5. Curiosity.

6. Moral struggle, illicit sex, guilt.

7. Departure—when departure is source of anxiety and grief to the hero.

8. Confession, admission of guilt.

In a total of 300 stories so rated, agreement between judges was 91 per cent on rating inferred affect of themes, and 94 per cent on overtly attributed characteristics of the figure being assayed.

SCT scoring. The original four categories of inferred affect were maintained in SCT scoring results—positive feelings, hostility, dependency and anxiety. Neutral or unclear responses were categorized as “other.” In general, scoring was done in terms of the obvious meaning of the completions, that is, taking completions at their “face-value.” Thus, “Most mothers are good” was scored *positive*

feelings without questioning whether or not the real meaning was that “Most mothers are good but mine is not,” etc.

The category *positive feelings* pertained to all completions in which the primary attitude expressed toward the figure was that of acceptance, love, or security.

The category *dependency* included those attitudes which were primarily that of dependency or immature compliance. Childishly toned responses, often pertaining to eating and being fed, or the expression of child-like feelings, were classified in this category.

The category of *anxiety* was applied to all completions in which the primary attitude was that of fear, guilt, anxiety, or insecurity.

The category of *hostility* contained all those completions in which the primary attitude expressed toward the figure was that of avoidance, derogation, rejection, or pure hostility.

All other responses which could not be fitted into the above categories were classed as “other.” Factual statements generally fell into this category.

A total of 35 sentence completions were scored for each subject. Agreement between judges were 1594 out of 1750 responses, or 91.1 per cent. Differences in scoring were resolved in discussion.

STATISTICAL TREATMENT OF DATA

Ratings for each figure being assayed in the SCT and TAT were now available for every subject. Ratings for the total group of subjects were dichotomized in terms of the median point for number of occurrences (or presence or absence) of each affect category. Each Rorschach variable was also dichotomized in terms of high and low (or presence and absence).

Not all anticipated variables materialized on the TAT and SCT; e.g., theme inferences to TAT stories evoked no dependency categories for inferences related to females, males,

people, and authority figures.

Tabulation compared "high" and "low" groups on each Rorschach variable with the "high" and "low" group of each TAT and SCT variable.

Chi-square tests of independence were used to test the relationships between these variables. Yates' correction for continuity was applied in all instances.

RESULTS

Of the relationships between the Rorschach variables and the SCT and TAT affect expressions, 24 were significant at the 10 per cent level. (Because of the exploratory nature of this research, levels of significance are reported for the 10 per cent level. Advantage was not taken for the case that could possibly have been made in favor of using one-tail tests of significance on selected predictions, which would have halved the probabilities quoted below.) See Table II.

In not all cases were expectations

confirmed. In fact, in some instances significant relationships were revealed in an opposite direction from that expected.

The tendency to reject human percepts on the Rorschach test (generally interpreted as "failure to identify with humans"), for example, was expected to demonstrate a positive relationship with hostility variables on other tests. However, the direction was proven to be a consistently negative one. Thus, Rorschach variable "females < 2" was negatively related to TAT-theme variable "mother-hostility"; Rorschach variable "males < 2" was negatively related to TAT-theme variable "males-hostility" as well as to the SCT variables "mother-hostility" and "people-hostility"; Rorschach variable "total H < 4" was related negatively to TAT-theme variable "mother-hostility" and to SCT variables "mother-hostility" and "people-hostility." It thus appears that whatever impulse or tendency leads one to reject human percepts on the Ror-

TABLE II—Relation of Rorschach Variables to Inferred Affect of TAT and SCT Responses

Rorschach Variable	SCT and TAT Variables	Level of Significance
Females < 2	TAT (T) : Mother-Hostility	.10 (←)
Males < 2	TAT (T) : Males-Hostility	.10 (←)
	SCT: Mother-Hostility	.05 (←)
	People-Hostility	.05 (←)
Humans < 4	TAT (T) : Mother-Hostility	.10 (←)
	SCT: Mother-Hostility	.10 (←)
	People—P.F.	.10
	People-Hostility	.01 (←)
Sum C > 2	TAT (O) : People: P.F.	.10 (←)
	People-Hostility	.10
	TAT (T) : Father-Dependency	.01 (←)
	SCT: Mother—P.F.	.10 (←)
Total R > 20	SCT: Females: Hostility	.10
	People: P.F.	.01 (←)
	People: Hostility	.05
	Auth: Anxiety	.05 (←)
At > 2	TAT (T) : Mother-Hostility	.10
	Father-Hostility	.05
	Father-Dependency	.05 (←)
	SCT: Females-Anxiety	.10 (←)
	People: Anxiety	.05 (←)
S	TAT (O) : Mother—P.F.	.10 (←)
	Mother-Hostility	.10
	SCT: Mother—P.F.	.05 (←)
H < Hd	No significant relationships	

schach test is also related to what is involved in *not* expressing hostility more overtly. It may be that hostility results in a perceptual sensitization which lowers one's threshold for Rorschach human percepts. It is also possible that the interpersonal relationships of one who basically has not identified with other people and is isolated from them are such that they simply do not engender the elements of ambivalence and hostility more characteristic of any real interaction with others.

This interpretation is substantiated by the demonstrated relationship between Rorschach variable 'Sum C > 2' and variables on other tests. As a measure of "outgoingness" or "responsiveness to environmental stimuli," this variable shows a consistent positive relationship with hostility variables on other tests and a negative relationship with those pertaining to positive feelings. This finding appears consistent with that of Finney (3), who found a correlation of "Sum C" with assaultive behavior.

It might have been anticipated that the number of Rorschach responses, as a measure of productivity, would produce relationships similar to those of the Sum C variable. This was demonstrated to be actually the case. Rorschach variable "total R > 20" was consistently related in a positive direction with hostility variables on other tests, and in a negative direction with variables pertaining to positive feelings.

The anticipated relationship of Rorschach anatomy responses as a measure of interest in bodily functioning with anxiety on other tests was found to be in the direction opposite to that expected. Rorschach variable "At > 2" was negatively related to SCT variables "females-anxiety" and "people-anxiety." These negative relationships might be considered to parallel results of Balken and Masserman (1, p. 79), who found that the conversion hysteric "simply is not worried."

Support for the suggested meaning of the Rorschach white-space response as a "nucleus of contrariness" (2, p. 47) is demonstrated in the positive relationship of Rorschach variable "S" response with TAT variable "mother-hostility" and its negative relationship with SCT variable "mother-positive feelings."

The Rorschach variable, $H < H_d$ (thought perhaps to correlate with expression of anxiety on other tests), did not reveal significant relationships with variables on other tests.

DISCUSSION

It would appear that relationships between tests can be suggestive of interpretative significance for unvalidated response categories and response categories whose meanings are not open to immediate psychological inspection, e.g., many Rorschach variables. It is rather surprising that the method has not been more fully exploited, particularly in view of the difficulty of validating test variables in terms of objective behavioral data.

As has been demonstrated, the relationships that pertain between tests apparently are often not predictable on any "common-sense" basis. This perhaps is not surprising, as tests representing such varying degrees of ambiguity are also generally assumed to tap different levels of personality functioning. As revealing the relationships between the covert and more overt aspects of personality functioning, however, the method demonstrated herein would appear to be a worth while one.

Efforts to differentiate diagnostic groups solely in terms of one test have often failed. If so-called "dynamic" relationships really are the determinants of personality disorders, however, the final distinction would not necessarily be found in what one diagnostic group does on a selected test, but, rather, what is done on that test *in relation to* what is done on some other test tapping a different level of functioning.

Thus, the need for a battery of tests in actual clinical practice stems not from the possible invalidity of any single test, but from the fact that responses to all tests in some way or other characterize the person who has produced them. While quantitative analyses of such diverse responses, however, are admittedly often a clumsy affair, the implications of such data bear important theoretical and practical significance.

SUMMARY

The present research comprises a study of the relationship of certain Rorschach variables to expressions of hostility, positive feelings, anxiety, and dependency as elicited in TAT and SCT productions related to important interpersonal figures. The relationships of these Rorschach variables with expressions of affect in other tests, although generally related to the specific affect predicted in terms of Rorschach theory, was often in the opposite direction to that anticipated. The general method of studying the relationship between tests is thereby recommended as a means of validating response categories of ambiguous psychological significance as well as for demonstrating relationships that might pertain between the covert and more overt aspects of personality functioning.

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ADDENDUM

Dauids (2) has recently reported an investigation of the degree of convergence among direct, indirect, and projective methods of personality assessment, finding some support for Allport's contention that "... direct and projective performance(s) in healthy people are all of a piece" (1, p. 116). The avowed purpose of assessment, however, appeared to influence the degree of concordance between measures, suggesting the influence of a variable other than that of adjustment or normality.

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Since submission of this article, Shatin's (3) excellent material and discussion, with a suggested rationale and procedure for further systematic investigation of the relationships between tests, has reached publication.

Personality Changes and Figure Drawings A Case Treated with ACTH¹

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The use of Figure Drawings as a projective technique has grown considerably in the last decade. Although still poorly validated, its contribution to the assessment of personality has been steadily recognized. The purpose of this paper is to illustrate the use of repeated Figure Drawings as an instrument reflecting personality changes at different points during, and after treatment. A nonpsychiatric case has been especially chosen to illustrate the use of drawings as an adjuvant retest tool.

PROCEDURE

The patient, L. H., was assessed independently by a psychological battery one day prior to treatment. The Figure Drawing findings, on the 10th and 21st day of ACTH treatment, and 2 months following the cessation of the ACTH therapy will be compared with the patient's clinical state reported independently by the medical staff at these same intervals.

The clinical findings reported by Browne and Kennedy et al (2, 4, 5) will also be used as references.

The Figure Drawing procedure recommended by Machover (6) was used. Structural and content features were analyzed. Table I is an outline of the more formal aspects that were rated. A Figure Drawing interpretation, of course, necessitates a full integration of quantitative and qualitative aspects, many of which escape formal rating techniques. Only the

significant changes from one testing to the next will be elaborated upon.

Brief Case Report

L. H., a twenty-seven year old male was employed for 3 years in a fluorescent lamp manufacturing plant where exposure to beryllium dust occurred. His chief complaints were those of fatigue, and mild non-productive cough.

Following a two week control period, adrenocorticotrophic hormone (ACTH) 25 mgm., four times a day intramuscularly, was commenced February 7, 1950 and continued for 28 days.

RESULTS

Following a brief note of the patient's overall clinical progress there will be an analysis of the drawings and the corresponding clinical notes, before, during, and 2 months following ACTH treatment.

Clinical Progress

Upon admittance to the hospital, L. H. was described by the medical staff as meek, depressed and unable to work. During the four weeks of therapy a striking improvement in his physical condition occurred. At the end of this time he was able to climb four flights of stairs easily, whereas prior to the ACTH treatment, a few steps would have produced severe dyspnea. At this stage the doctor reported increasing aggression and some elation (4, pp. 146-147).

On the 21st day of treatment the clinical staff reported that "the company doctor came to see him, and just as the doctor entered the room, the man burst out in terms of the most intense aggression against the

¹ The major portion of this paper was read at the Annual Meeting of the Canadian Psychological Association, Kingston, Ontario, 1953.

² The Author wishes to acknowledge the very valuable criticism of Dr. R. B. Malmo, and helpfulness of Dr. J. S. L. Brown in securing the clinical findings.

TABLE I. Structural and Content Recording Form for the Figure Drawing Test

Size:	small 1"-5"	average 5"-7"	large 7"-10"
Placement:	left	center	right
Perspective:	left profile	full face	right profile (rear view)
Posture:	withdrawn	relaxed	outgoing (expansive)
Movement:	none, rigid	mild	overactive
Line Pressure:	very light	medium	heavy
Shading:	some	mild	much
Midline Emphasis:	none	some	much
Detail:	none	some	much
Body Parts:	omitted:		
	Emphasized, erased, exaggerated parts:		
	Note conflict areas:		
Deviations in Drawing Sequence:			
Important Post Drawing Statements:			

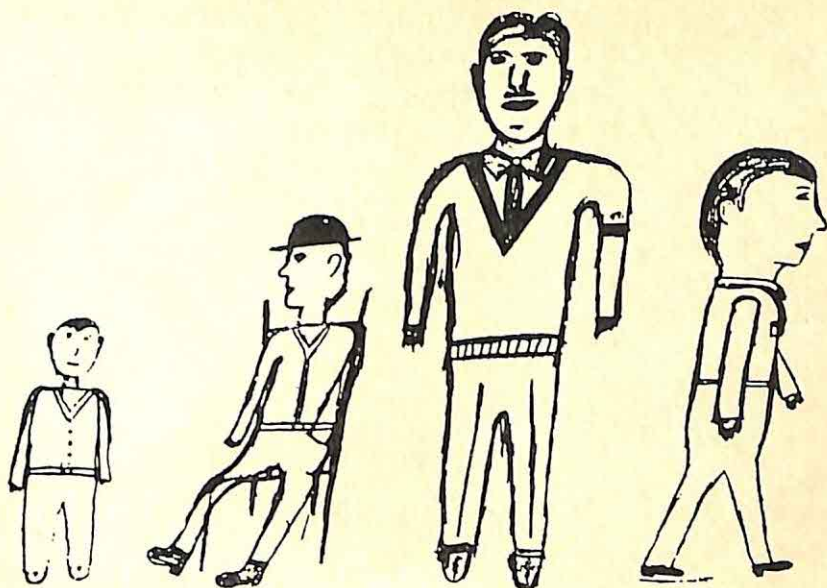
TABLE II.

<i>Stage of Treatment</i>	<i>L.H's Clinical Status</i>	<i>Figure Drawing Changes</i>
Before ACTH	meek, somewhat depressed, co-operative.	small ($3\frac{3}{4}$ ", $3\frac{1}{8}$ "), moderate line pressure, few details.
During ACTH (10th day)	moderately anxious and depressed, restless, angry about home conditions.	average size ($5\frac{1}{2}$ "), seated male, moderate line pressure, and shading, aggressive treatment of hand and mouth.
During ACTH (21st day)	better physically, question if euphoric, shows some attraction for female patient; following week became very anxious and grandiose.	large size ($8\frac{1}{2}$ "), greater detail, face forward college figure, heavy line pressure, and shading, overt hostile indicates — teeth, needle fingers: provocative treatment of female mouth and hair.
ACTH discontinued (28th day)		
2 months after ACTH	physically much better but not as well as at the termination of treatment; no sign of overt anxiety or hostility.	average size ($6\frac{1}{2}$ "), fewer details, moderate line pressure, and shading, no midline emphasis, decline in aggressive features.

company, against the doctor, against all those things which he had apparently deeply resented" (2, p. 198) (It is to be noted that the patient had never previously expressed these criticisms.) The patient became increasingly anxious, and feared self-damage. A fear of the hormone developed. On the twenty-eighth day the hormone was discontinued, for fear of causing further emotional instability. Two months following the cessation of the ACTH therapy, the clinical state of the patient appeared much better than before therapy, but not as well as at the completion of ACTH administration.

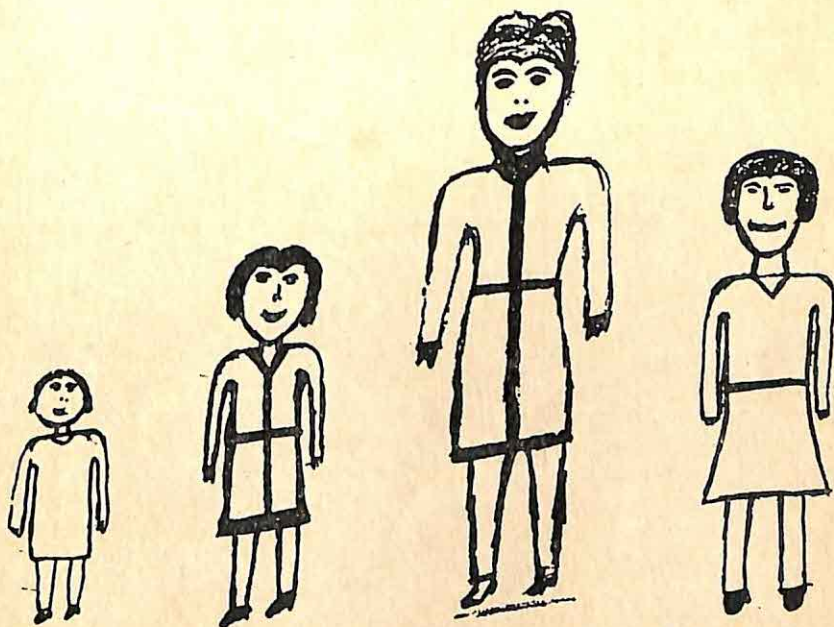
Figure Drawings 1 and 2 — prior to ACTH therapy.

The overall picture was that of a submissive, immobile individual (small size; $3\frac{3}{4}$ " male, $3\frac{1}{2}$ " female; rigid posture; withdrawn in stance; blank expression). Strong concern with bodily functions was suggested by the midline emphasis. Since this is a longitudinal series, it seems fair to hypothesize that the V-neck and midline emphasis were projections of the patient's own preoccupation with his lung disease and that branching bronchi may have been symbolically represented. Inhibited aggressive im-



FIGURES 1 TO 4. Male figures drawn by patient with berylliosis, treated with pork ACTH, 100 mg/day.

- Fig. 1 — Drawing prior to treatment.
- Fig. 2 — On 10th day of ACTH treatment.
- Fig. 3 — On 21st day of ACTH treatment.
- Fig. 4 — Drawing two months after termination of treatment.



FIGURES 5 TO 8. Female figures drawn by patient with berylliosis, treated with pork ACTH, 100 mg/day.

- Fig. 5 — Drawing Prior to treatment.
- Fig. 6 — On 10th day of ACTH treatment.
- Fig. 7 — On 21st day of ACTH treatment.
- Fig. 8 — Drawing two months after termination of treatment.

pulses were suggested by the closed fist treatment. The withdrawn restrained stance also contributed to the need to inhibit aggressive, hostile impulses.

Ambivalent feelings towards the "wife" figure were noted from the barren, rigid female drawing. Conflicts relating to her dominance and aggression were suggested by the stronger female figure, and the attempt to broaden the shoulders of the male drawing.

*Figure Drawings 3 and 4—
10th day of ACTH treatment.*

Drawings 3 and 4 revealed the following changes in comparison with those done prior to treatment. They had increased approximately 2" to 5½" suggesting increased feelings of well-being and ego strength. Increased line pressure, from medium to heavy, the more definite shape, the greater amount of detail, and the open mouth, suggested greater strength, self-confidence, energy and aggression. Guilt feelings over hostile impulses which were being inhibited were inferred from the hand in the pocket. Some feelings of depression and inability to face responsibility were suggested by the seated male figure, i.e., unable to stand up to things. The left profile indicates as well a more avoiding or evasive attitude than the front face figure of the last testing.

In summary the drawings on the 10th day of treatment showed a growth in well-being and self-confidence, accompanied by some features of depression and aggression, with the likelihood that he was concerned about assuming independence and responsibility too soon.

*Figure Drawings 5 and 6—
21st day of ACTH treatment.*

Figures 5 and 6 show that a marked change has taken place within 10 days of treatment. A marked increase in feelings of well-being, to the point of some grandiose ideation was expressed by the 3" increase in size (from 5½"

to 8½"), the increase in detailing, and the change in content. The male figure is now not a tired old man, but a strong, vigorous college student, and the female a more provocative woman with painted lips and masses of hair. An increase in anxiety was inferred from shading and the very heavy line pressure. Growing loss of control over aggressive impulses was suggested by the addition of teeth, sharp fingers, the stern expression, the large size, and the excessive shading and line pressure. The elaborate attention and detailing of the over-size tie, and the large nose suggests that they may be regarded as sexual symbols (since they both are projections in the midline of the body). Prestige needs are expressed by the college sweater and the extensive ground lines. The husky broad shoulders and the moustache are other indications of the patient's desire for virility. The more provocative treatment of the female, the heavy coloring, and the beltings at the waist of both figures, suggests some attempt to inhibit aroused impulses, e.g., sexual aggression. Continuing concern with body disorder was still suggested by the strong midline emphasis.

*Figure Drawings 7 and 8—done
two months after ACTH treatment.*

Figures 7 and 8 differ a good deal from his drawing productions on the 21st day of treatment. The figures are smaller and more conservative. The emphasis is no longer on the husky body, but concentrated on the large head, suggesting preoccupation with ambitious and intellectual strivings. The female is less voluptuous, but pleasanter than the females drawn prior to treatment or the one produced on the 10th ACTH treatment day.

The significant changes included a decline in size from 8½" to 6½", falling now in the average figure drawing range. There is a marked decline in aggression, hostility, and anxiety since the last testing. Teeth

are omitted, the figures are rounded, the line pressure is less heavy, and the use of shading significantly reduced. For the first time there is no midline emphasis in either of the figures, suggesting a marked improvement in physical condition. Active movement is introduced for the first time, and since the patient is striding in a right profile manner we may infer some active ambition and hopes for the future, i.e., striding forth to face the world. The larger more detailed male arms and hands suggests a desire to "take things into his own hands," to assert his independence as it were.

There is still evidence that the patient is a fearful, defensive, dependent man (rigid strong body lines, oral emphasis and militant female figure), however, he would appear to be more secure, less depressed, and more aggressive, than when examined prior to ACTH treatment.

Other test Findings.

Prior to ACTH therapy the patient received a battery of tests. (Only the Figure Drawings were constantly repeated.) The patient was functioning with Average intelligence (abbreviated Wechsler-Bellevue Scale). Retest on the 10th day of ACTH therapy revealed an improvement on the Wechsler-Bellevue, Form II, Digit Span weighted score from a previous 7 to 9 and an increase in scores of 12 to 14 on the Block Design subtests.

Ratings of mood of the figures, not reported here, revealed a swing from "slightly depressed" to "high in spirits" on the 21st treatment day to "fairly high in spirits" 2 months later. Post drawing comments and repeated level of aspiration tests evidenced increased energy, faster performances, greater ambitiousness, and aggressiveness.

A Rorschach was administered prior to treatment and on the 21st treatment day. On each occasion there was a total of 17 responses with evi-

dence of a tightly controlled, impoverished personality. The second protocol which by chance was repeated at the height of his ACTH treatment revealed that the patient was somewhat more spontaneous, less depressed, and more aggressive. Changes in the psychogram included a decline in rigid control from 88% Form to 65%; five animal movement responses as compared to a previous one; an additional popular response; color was used once (FC), and there was a marked increase in initial reaction time to the colored cards. The content was more varied than in the former record. On this occasion he made three references to playful, friendly, or fighting animals on Cards 2 and 3, whereas formerly there was no such description.

CLINICAL NOTES

First 10 days of ACTH Treatment.

The patient was reported by the staff to be in better physical health and to be socializing well. On the eighth day L. H. was reported as "moderately anxious and stated that he felt low down like the weather." (Confirmation of the depressive feeling noted by the seated figure of the tired old man on the 10th treatment day.)

10th to 21st days of ACTH Treatment.

On the 11th day the patient complained to the intern "I'm much better physically, but not mentally." He was quite upset about his home condition, but pleased over his wife's feeling that he was improving physically.

On the 21st day it was questioned whether the patient was euphoric. On this same day the patient's former company doctor paid him a visit. The incident has already been recorded earlier in the paper, how he became very aggressive and critical of the doctor and the industrial company. There was little doubt that the hos-

tile and anxious indications were confirmed clinically.

On the 21st treatment day the nurses noted also that L. H. was paying some attention to a female patient. The noted rise in sexual feelings in drawings 5 and 6 was also confirmed clinically.

21st to 28th day of ACTH Treatment.

During the last week the patient became more energetic, ambitious, increasingly anxious and overtly aggressive and hostile. He showed evidence for some grandiose feelings and said that he could read another's mind, or tell what the radio was reporting, without being on. On the 24th day the patient became a little confused and on the 28th day the treatment was discontinued.

Clinical status of L. H. two months following the ACTH Treatment.

Following the cessation of ACTH therapy the marked feelings of anxiety, fear and apprehension cleared up within two days. The aggressive tendencies persisted for two weeks. Upon discharge the patient was reported as: less depressed; more aggressive; and more ambitious and hopeful for the future.

Two months later the patient returned and was assessed as being physically much improved. His hopes were not quite as ambitious as at the completion of ACTH administration, but he had entered a night school for watchmaking and was showing an optimistic outlook for the future.

DISCUSSION

A value of the Figure Drawing test over the other projective techniques, such as the Rorschach and the TAT, is that it is easier and faster to administer, score and interpret. More important is the fact that the drawings appear to be much keener in reflecting temporary and fluctuating moods and behavior within short time intervals. Numerous drawing

productions are easy to obtain and may be used very much like an album of photographs, which mirrors and records, at it were, the changing mental and physical stages. It appears to be a particularly useful visual instrument for even untrained psychiatric staff to recognize that there are visible body-image changes from one drawing to the next. The fact that the medical staff can quickly learn how to empathize with the Figure Drawings stimulates their interest. In turn it appears easier to communicate Figure Drawing findings than, for example, those of the Rorschach.

The present case example would appear to demonstrate how the patient's graphic productions provided a significant time sample of personality. In the past it would appear that Figure Drawing analysis has stressed the content or individual parts of the drawing to determine the conflict areas of the patient. Although content analysis is extremely valuable when the Figure Drawings are used in a longitudinal series, the structural changes such as size, line pressure, perspective, etc., appear to provide even more valuable graphic indices of the changing personality picture. Further it is suggested that a longitudinal series is able to provide a very useful prognostic guide of the patient's progress or relapse. Repeated Rorschachs at such short intervals are usually infeasible (because of the time factor) and further when they have been used, have not been able to detect these more transitory mood or behavior changes.

The use of the Figure Drawing as an instrument for research will be more useful once quantification of the results are possible. At present this problem is under investigation.

This paper is not meant to suggest that similar personality changes occur with other patients who are receiving ACTH. In this one case at least the ACTH appeared to act as a disinhibiting agent, for previously noted aggressive, hostile impulses in

the pretreatment period grew markedly in stature with administration of the hormone. Various workers (1, 2, 3, 4) differ in their beliefs as to what influence ACTH exerts on the personality structure. Some claim that the ACTH introduces new mental components, others believe that the hormone intensifies or releases certain mental phenomena, inherent in the personality structure.

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The Influence of Color on the Rorschach Test¹

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It is the purpose of this paper to report some results of an investigation on the influence of color as a stimulus on the Rorschach performance of hospitalized neuropsychiatric patients.

Except for some studies concerned with physiological measures (14, 16, 28, 29), most of the previously reported investigations in this area have used color shock signs as dependent variables. Brosin and Fromm (8) introduced the first hint that color might not be responsible for color shock when they found that neurotic color-blind persons showed signs of color shock. Lazarus (20, 21, 22) attacked the problem directly by removing the color from the cards. The general plan of investigation which he introduced has been used in many other follow-up studies, with predominantly negative results. The method involves administering both the standard Rorschach inkblots and their achromatic copies to two groups of subjects, in counter-balanced order, and comparing various scorable aspects of the protocols so obtained.

With few exceptions (7, 25), the test-retest design has been used.² The order of presentation of the cards has been varied (24, 27). A few investiga-

tions employed the group Rorschach technique (20, 21, 22, 31); but most studies have reported individual administration, the inkblots being reproduced photographically. Allen and associates (2, 3, 4, 5, 6) developed a more satisfactory achromatic set by having non-color cards printed from the same plates used for the standard Rorschach. Use of normal subjects has predominated (11, 20, 21, 22, 25, 31, 32, 33, 34), only a few studies reporting the use of maladjusted or patient groups (6, 8, 9, 13, 26, 28).

Results of investigations employing the general experimental design described above indicate that color has little to do with how subjects react to inkblots (1, 17, 18). Other investigators (32, 33, 35), using experimental techniques which did not involve standard Rorschach administration, found that color did play a significant role in subjects' reactions to the cards.

It would seem, therefore, that the problem is to understand how such apparently contradictory results are possible. This is the general purpose of the present report. Specifically, the questions are these: Is the color on Cards II, III, VIII, IX, and X, actually the stimulus for the reactions which are commonly attributed to the influence of color? That is, does color add anything to the stimulus qualities of the cards on which it appears? If so, what? When color disturbs performance, what is it about the color that is disturbing?

PROCEDURE

The design of the experiment involved the administration of the standard Rorschach cards to thirty hospitalized male neuropsychiatric subjects (ten psychotics, ten neurotics, and ten organics) and the administra-

¹ Based on dissertation (10). From the Veterans Administration Center, Los Angeles, California.

² Though there is no conclusive evidence, the appropriateness of such a test-retest method is at best questionable. With some subjects, responses to a second test are more variable when chromatic cards are presented first. With others, which cards come first seems to make no difference in consistency of response. If a set established in the first test is maintained during later testing, color effects which might otherwise appear would be minimized. An experimental group-control group method avoids this possibility but introduces the new problem of individual differences in color responsiveness.

tion of an achromatic version³ of the test (similar in all respects except for the absence of color) to a comparable group of thirty neuropsychiatric subjects.⁴ In addition to the standard administration of the tests, each subject was asked to choose which card was liked best and which card liked least of the ten cards seen during the test. Each subject was also shown each of the inkblots containing color paired with its achromatic counterpart, and asked to state which of the two versions of the inkblot was liked best.

The Rorschach protocols and supplementary material yielded by this procedure are considered in the light of the questions listed above, the following methods being used to evaluate the test material:

1. Comparison of total protocols by judges.
2. Analysis of records in terms of color shock signs.
3. Analysis of individual responses in terms of such conceptual content as content categories as conventionally scored, and ratings of content with respect to anxiety, aggression, and affect reflected in the concept.
4. Comparisons of ratings of individual cards for hue-form-incongruity, with subjects' expressed preferences for the cards.

RESULTS

Protocols. If color does add to the stimulus qualities of the inkblots on which it appears, the performance of

a subject who is tested with the standard Rorschach will differ from that of a subject tested with the achromatic Rorschach. To be of any practical import, such a difference must be so pronounced that it could be reliably detected by competent Rorschach interpreters. The somewhat contradictory results reported in the literature indicate that differences are not found reliably when isolated color shock signs are used as the response variable. Rorschach interpreters, however, do not customarily use the isolated signs favored in experimentation; instead, the entire Rorschach protocol is examined and compared with subjective norms derived from the interpreter's experience and training, in terms of the extent to which color disturbs or facilitates performance.

In the present study, Rorschach judges⁵ were asked to compare protocols obtained under both achromatic (A) and chromatic (C) conditions and to make judgments based on the examination of complete protocols. First the protocols were assembled in pairs, each pair containing one color protocol and one non-color protocol obtained from subjects representing the same diagnostic classification. Judges — who were not aware of the purpose or conditions of the experiment — were asked to compare the two records of each pair with respect to eight general questions. The type of judgment required by each question is indicated in general terms in Table I. The form of each question was the same; for example, "Which of the two shows the greater reaction to 'color'?" (Question No. 2), "Which record shows more neurotic disturbance?" (Question No. 6).

These judgments were used to test a set of eight hypotheses. Each question contained an implicit hypothesis

³ The achromatic set was supplied by Hans Huber, Bern, publishers of the standard Rorschach, who received instructions to use the same presses, pressure, and black ink used on the standard cards.

⁴ The typical subject in either the experimental or control group is a white, male, hospitalized veteran without defective color vision or history of previous Rorschach administration, whose neuropsychiatric diagnosis could be classed as functional psychotic reaction, psychoneurotic reaction, or chronic brain syndrome. He is in his middle thirties, and he has an eleventh or twelfth grade education. The current hospitalization is probably his first admission to that hospital.

⁵ Serving as judges in this and other sections of the study were 23 advanced trainees in the Veterans Administration Clinical Psychology Training Program in the Los Angeles area.

TABLE I. Results of Judgments of Paired Protocols

Question	Predicted Direction (Success)	Number of Successes	Probability*
1. "Richness".....	C>A	15	.58
2. Color.....	C>A	20	.05
3. Shading.....	A>C	13	.82
4. Form.....	A>C	20	.05
5. Ease of judgment (of questions 2, 3, or 4).....	2>3 or 4	13	.16
6. Neurotic.....	C>A	19	.10
7. Psychotic.....	A>C	20	.05
8. Organic.....	A>C	21	.03

* Probability figures are taken from Table II—Partial Sums, of the Tables of the Binomial Probability Distribution (36), with $p=.5$, $n=30$, and r determined from figures listed in the column headed "Number of Successes."

concerned with influences of color which could be detected through appraisal of protocols. The set of hypotheses *as a whole* was confirmed at the .01 level of significance.⁶ Results of testing each individual hypothesis are shown in Table I in the column labelled, "Probability."

The implication of these findings is that the presence of color on the Rorschach does exert an influence on the subject's performance which can be detected by judges. When the subject has the opportunity to react to color, judges rate the subject as having a greater reaction to "color," a global judgment based on commonly used indices of "color" reaction which do not necessarily involve direct reference to color. The presence of color may possibly ($p=.16$) add to the ease of judging "color" reactions as compared with "shading" or "form." Absence of color increases the subject's attention to form characteristics, as rated by judges. Judges may ($p=.10$) be more willing to make diagnostic statements about neuroticism as a characteristic of the subject exposed to color; and they are more willing to make diagnostic statements about psychosis and organic brain pathology when color is not available as a stim-

ulus. The data offer some confirmatory evidence relating "color" reaction to neuroticism; the set of hypotheses, as a whole, is confirmed to a degree greater than chance for the neurotic group considered separately, but not for the psychotic or organic groups.

Color Shock signs. So that the results of this study might be compared with findings of other studies using color shock signs, all sixty Rorschach protocols were scored for each of ten signs selected from the many color shock signs which have been proposed. The C protocols, as a group, were then compared with the A protocols, as a group. Table II shows the signs which were used and the statistical tests employed to evaluate the results. The hypothesis in each case is that the presence of the color shock sign depends on the presence of color in the Rorschach.

No one of the hypotheses involving the ten color shock signs was confirmed. Thus it appears that single color shock signs are not good indicators of the effect of color. In fact, there is no proof that color shock signs are at all related to color. This same conclusion has emerged from practically every experiment in which these signs have been studied. (See above.)

In this investigation, appraisal of the record as a whole leads to the conclusion that color does influence reactions to the Rorschach, whereas

⁶ The method for testing the significance of a set of hypotheses, described by Fisher (12, pp. 99-101), involves transforming the individual exact probabilities into Chi Square values (15) and determining the probability associated with the composite Chi Square value.

TABLE II. Color Shock Signs

Color Shock Sign	Statistical Technique
1. Productivity	
A. R	Analysis of variance — ranks
B. R to color cards.....	Analysis of variance
2. Reaction Time	
A. Chromatic Reaction Time.....	Analysis of variance — ranks
B. Difference between Chromatic Reaction Time and Achromatic Reaction Time without regard for sign.....	Analysis of variance — ranks
C. Reaction Time for each color card.....	Analysis of variance — ranks
D. Extreme Reaction Time, for each color card	Chi Square
3. (8-9-10)%	
A. High (8-9-10)%	Analysis of variance — ranks
B. Difference between (8-9-10)% and 33% without regard for sign.....	Analysis of variance — ranks
4. Rejections	
A. On any card.....	Chi Square
B. On any color card.....	Chi Square
5. Form quality of responses (minus form).....	Chi Square
6. Populars	
A. P%	Analysis of variance — ranks
B. Frequency of each color card P.....	Chi Square
7. At (1 or more response scored At).....	Chi Square
8. A%	Analysis of variance — ranks
9. Red avoidance (non-use of red areas on Cards II, III)	Critical ratio — proportions
10. Irregularity of succession.....	Inspection (few subjects had succession)

counting of signs suggests exactly the opposite conclusion. One suspects, therefore, that neither method of analysis tells much about the effect of color on the Rorschach, but only about the effect of color which can be demonstrated by a particular method of investigation. Findings obtained through the use of color shock signs alone imply nothing about the effect of color on any aspect of Rorschach performance other than that represented by color shock signs. The method of evaluating total protocols used in this experiment is more similar to clinical methods, but again it would be a mistake to over-generalize. Positive findings obtained by any particular method, however, carry the strong implication that color does influence reactions to the Rorschach, inasmuch as there must first be an effect before any part of the effect can be demonstrated by any method.

Conceptual content. In this section the conceptual content of responses and the associated verbalizations are

discussed. A total of 1027 responses were made to the two versions of the Rorschach. These were rated individually by judges with respect to the content category as conventionally scored (Klopfer system, 23), the degree of anxiety manifested in the response, the affect associated with the concept and its description, and the aggression or submission reflected in the concept.

The conceptual content of responses reflects the influence of the color stimulus in the following ways:

1. The distribution of content categories, as conventionally scored, is changed by the presence of color on the test.⁷ Although similar concepts appear, whether or not color is available as a stimulus, on the whole there

⁷ The Chi Square value obtained in the overall comparison was significant at the .01 but not at the .001 level. (For method, see McNemar, 23, pp. 207-210.) Critical ratios (23, p. 76) for individual categories reached the .05 level of significance, or better, only in the case of Hd (C>A), Geo (C>A), and Aobj (A>C). The same methods were used for ratings of anxiety, aggression, and affect.

are shifts in emphasis among the categories when color is present. The results provide some basis for speculating that subjects tend to choose concepts for which the color (or lack of color) is appropriate.

The implication here is that there is a real difference in content which can be attributed to the presence or absence of color. Much of the individuality of a response is lost when the information contained in the response is reduced to the bare content classification (such as "Animal"). That a difference is demonstrated, in spite of this over-simplification, suggests that color must have an insistent effect on the subject's conceptual processes.

2. The color-stimulated concept is more likely to be judged as "Aggressive" ($p = .03$) and "Submissive" ($p = .04$), and less likely to be rated as "Neutral" ($p = .001$). The overall distributions of ratings differ ($p = .01$).

3. "Unpleasant" affect is more often expressed ($p = .005$) in the response to the standard Rorschach, and the response is less often considered "Neutral" ($p = .002$) in affective tone. The distributions of ratings for the two groups differ ($p = .02$).

In contrast, color does not appear to influence manifestations of anxiety or expressions of "Pleasant" affect.

The results offer no confirmation of hypotheses relating reaction to color with neuroticism. When results were considered in terms of the diagnostic classifications of the subjects, neurotics in the A and C groups were not found to differ on any of these variables, while both the psychotic subgroups and the organic subgroups were shown to differ in at least one instance.

These methods for evaluating protocols differ from methods involving isolated signs in at least one major characteristic: each response is given some rating, whereas a particular color shock sign may appear only once in a dozen protocols. Ratings on the clinical concepts of anxiety, aggression, and affect have at least a lim-

ited resemblance to techniques of evaluation used clinically. These methods, on the whole, lead to positive conclusions about the influence of color on certain aspects of Rorschach performance; the sign approach, applied to the same data, does not.

Supplementary procedures. The emphasis thus far in this report has been placed on two main points: (a) that the presence of color does have some influence on the subject's Rorschach performance which can be seen when protocols are examined as units, but which is not likely to show up in any mechanical consideration of individual color shock signs; and (b) that an effect of color can be seen in the conceptual content of responses, with more affect and aggression being expressed in the responses.

Now a third aspect will be considered: when a subject's reactions seem to be disturbed by color, what is it about the color that is disturbing? Rorschach (30) initially hypothesized an intrinsic link between color and affect. Various other investigators have proposed that emotional reactions are stimulated indirectly by color, through some complication of the task for the subject (such as the sudden appearance of color demanding a shift in orientation which may be accompanied by manifestations of conflict in an insecure subject).

The present experiment was not designed to provide a crucial test of any one of the various hypotheses. The data, however, may throw some light on two proposals in particular. Both of these hypotheses have in common the supposition that it is not the color as such but the particular color combined with the particular form on the inkblot that is disturbing to the subject: (a) Siipola (32, 33) proposes that color causes disturbance when it is incongruous with the concept most suggested by the form; and (b) Wallen's study (35) tentatively suggests that the disturbance arises when the combination of form and color prompts an emotionally loaded

concept. Neither of these investigators used standard administration of the Rorschach. In the present study the conceptual content of responses and associated affective reactions are examined in order to consider these two points of view in relation to test material produced by the same groups of subjects and to the standard administration of the Rorschach.

The normally colored cards were ranked in order of the degree of hue-form incongruity determined for each card, Card VIII having the highest and Card II the lowest. In contrast to Siipola's findings, a high degree of hue-form incongruity was not found to be associated with a lengthened reaction time.

The normally colored cards and the normally achromatic cards were about equally often preferred, when subjects were given a free choice. These subjects in general preferred the C version of the cards, especially on Cards VIII, IX, and X.

A qualitative appraisal was made of the reasons which subjects gave for their preference of the achromatic version of Card II and Card VIII, the cards at the extremes of the hue-form incongruity continuum. Results of this appraisal suggested that a combination of the two hypotheses might be advisable.

It is proposed that Cards II and VIII differ in their color-form properties to such an extent that subjects use different bases for reacting to the color stimuli on the two cards. Subjects object to the hue-form incongruity of Card VIII, saying, for example: "Pink mice and green rock would be abnormal." On Card II, however, subjects object to the associations aroused by the combination of color and form, such as "bloody bear." Color disturbance on Card VIII (as expressed in card preference) seems to represent disturbance due to complication of an intellectual task; while the disturbance to Card II seems to represent more of an emotional disturbance.

DISCUSSION

The general problem attacked in this experiment is the role of color as a part of the total stimulus situation of the Rorschach Test. When the literature was reviewed, it was noted that most investigators of this problem limited themselves to a consideration of color shock signs, usually taken one at a time. Results of such investigations pointed rather consistently to the conclusion that color had little if any effect on the occurrence of the usual signs of color shock, the implication being that the influence of color on the subject's Rorschach performance was overrated.

Results of the present study point to the need for caution in generalizing from experimental work to the Rorschach as it is used clinically. The method used to evaluate the influence of color appears to be of primary importance in determining whether any effect of color is seen.

When isolated color shock signs were used as the unit of evaluation, no effect of color could be demonstrated with these subjects. When the same raw material, however, was analyzed in a different way, color did appear to exert an influence on the subject's Rorschach performance. Two evaluation methods, both designed to approximate clinical procedures, yielded results directly opposed to the results obtained through the mechanical consideration of color shock signs. The first method involved comparing a protocol as a whole with another, one protocol in the pair being obtained under each of the experimental conditions (achromatic or standard Rorschach), in terms of a number of very general questions about reactions to color, shading, and form, and about the diagnosing of neuropsychiatric disorders. The second method involved taking the individual response as the unit of analysis, and requiring judgments to be made about the clinical variables of anxiety, aggression, and affect, as well

as the content categories as conventionally scored. Such an approach differs from the isolated sign technique in that each response is given some sort of rating. Although not all of the individual hypotheses were confirmed, results obtained through the use of these two methods of evaluation in general indicated that color influenced the performance of these subjects.

Since different methods of analysis of the same basic material—the sixty protocols—yield results which suggest opposite conclusions, it becomes meaningless to speak of Rorschach performance; instead one must speak of the various aspects of Rorschach performance which may be studied by the various methods. Previous investigations give ample evidence that color shock signs are not useful units of evaluation for studying the role of color as a part of the Rorschach stimulus situation; the present experiment suggests that more clinically-oriented methods are more apt to yield useful information.

The second method (judgments based on single responses) appears to be especially promising. It was shown that the two groups (A and C) differed in the type of content favored. While no group differences were found in regard to anxiety ratings, the presence of color increased the judged aggression and affect expressed in the concept and its description. There were some exceptions, but many of the hypotheses relating color to aggression and affect received support. These results suggest that emphasis on the single response (as a miniature Rorschach) combined with refinement of the type of clinical judgments to be made, might be a profitable method for further study of the problem.

Color was found to affect performance by previous investigators who did not restrict themselves to consideration of color shock signs, but who used special techniques to study the problem of why color acted as a stim-

ulus to emotional reactions, when it did. Use of specially designed stimulus material or of questions about the subject's reactions are fruitful methods for the shaping of hypotheses about the role of color; but whether results of such methods can be generalized to the Rorschach Test, as ordinarily administered, remains an open question.

In the present study, methods similar to those of Siipola and Wallen, in combination with standard administration of the Rorschach, were used in an attempt to answer this question. Hue-form incongruity ratings for the normally colored cards corresponded fairly well with Siipola's results based on experimental blots representing various areas of the Rorschach cards. She found longer reaction times to be associated with a high degree of hue-form incongruity, a finding which was not duplicated in the present study. The material on card preference did not lend itself to a meaningful comparison with Wallen's results, because of the much lower number of cases in the present study.

When preference for achromatic blots (Wallen's sign of color disturbance) was considered in relation to the hue-form incongruity characteristics of the inkblots, a qualitative appraisal suggested that the role of color as a stimulus might differ considerably from one color card to another. Card VIII, for these subjects, is a card high in hue-form incongruity. When disturbance (as reflected by preference for the achromatic version) occurs, the subject is likely to be objecting to the hue-form incongruity, an objection which appears to relate to the increased difficulty of his task. Card II, however, is low in hue-form incongruity. When disturbance occurs here, the subject is likely to be objecting to the specific concept which is elicited more readily by the colored inkblot. While no statistical significance may be attached to these qualitative indications, there is at least a strong implication that color

disturbance does not result from the same mechanism or reflect the same type of disturbance on these two cards.

The principal implications of the results of this study are that: (a) the method of evaluation used in a study determines whether color is shown to influence Rorschach performance; and (b) the individual colored cards differ in their stimulus characteristics to such an extent that a reaction to the color on one card should not be given the same interpretation as a similar reaction to another card.

SUMMARY

An experiment was conducted to investigate the influence of the stimulus color on certain aspects of performance on the Rorschach Psychodiagnostic Test.

The Rorschach was administered individually to a group of thirty subjects (ten psychotics, ten neurotics, and ten organics) and an achromatic version of the test (similar in all respects except for the absence of color) to a comparable group of thirty subjects.

The color stimulus was shown to influence the subject's performance when protocols were evaluated in a global way, but not when consideration was limited to color shock signs. The influence of color was apparent in the conceptual content of responses. The presence of color resulted in a shift in emphasis among content categories as conventionally scored; and it increased ratings of aggression and affect (especially unpleasant affect), as reflected in the content. There was no effect on ratings of anxiety. These results imply that the method of evaluation determines whether color is shown to influence Rorschach performance.

Analysis of data on card preferences and hue-form incongruity ratings suggests that the individual colored cards differ in their stimulus characteristics to such an extent that a reaction to the color on one card

should not be given the same interpretation as a similar reaction to another card. It is proposed that: when a card is characterized by a high degree of hue-form incongruity, disturbance probably arises because the subject must choose between the dominant form-suggested association and whatever associations are aroused by the color; when a card is characterized by a low degree of hue-form incongruity, any disturbance probably results from the particular combination of color and form which facilitates an association which is emotionally disturbing to the subject.

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An Application of Objective TAT Scoring¹

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The utilization of the TAT in clinical diagnosis has become increasingly feasible with the development of simple, objective, reliable and valid scoring categories for male subjects (2). These TAT scoring categories were developed from three basic aspects of test behavior applicable to scoring systems for all projective techniques (3): (a) approach to the situation (reflected in the manner standard test directions are followed); (b) normality of response (abstractions of structural and content material included by specified percentages of "normal" Ss); (c) rarity of response (those infrequent responses in a "normal" population which appear with significantly greater frequency in psychopathological conditions). Scoring systems for other projective techniques (sentence completions, word associations, draw-a-person, Bender-Gestalt) are being devised in terms of this rationale and validation studies are in progress. This present study is an application of previously developed TAT scoring categories to female groups.

SCORING SYSTEM

The three categories representative of the three basic aspects of test behavior are Perceptual Organization (PO), Perceptual Range (PR), and Perceptual Personalization (PP), respectively.

Perceptual Organization. This category reflects the Ss ability to follow the standard directions. Components of the TAT scored are card descrip-

tion, present behavior, past events, future events, feeling, thought and outcome. One point is scored for each part included. This category can be scored for stories to any and all cards as it is independent of the particular stimulus.

Perceptual Range. Empirical evidence has been used to establish criteria as to content a group of "normal" Ss will include in their stories a given percentage of the time (7). Three separate stimulus properties were chosen for each card used on the basis of inclusion by approximately 90 percent of this normal group. The 15 stimulus properties follow: Card II (a) family; young girl, activity specified; woman; adult male; (b) fields or farm; (c) books or school; Card III (d) female; (e) emotions noted, activity specified; (f) story: death, murder, illness, frustration; Card IV (g) male, emotions noted, activity specified; (h) woman, activity specified; (i) conflict or cooperation; Card VI (j) male, activity specified; (k) female, emotions noted; (l) relationship indicated; Card VII (m) adult female, activity specified, emotions noted; (n) child, female, emotions noted; (o) relationship specified. One point is scored for each of these mentioned in the story. All items included in each point must be mentioned for score to be earned. No score is given for indefinite or ambiguous statements.

Perceptual Personalization. Some expressions, words, and phrases used in the story are incongruous and have no obvious reference to the story that S is trying to relate. These inclusions are clearly neither stimulus reproductions nor additions to the stimulus. PP are deviations from the relatively consistent, organized protocol-product, the TAT story. These deviations, in

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order to be scored, must be extreme. They may refer to things labeled performance inadequacy, comments, parenthetical remarks, qualifications, picture criticisms, adventitious descriptions, vagueness, evasion, or direct personal reference. One point is scored for each personalized inclusion.

PROBLEM

The diagnostic efficacy of these three TAT scoring categories in both an initial study with male Ss (2), and successful cross validation (6), impels application to female Ss. It is hypothesized that this scoring system is significantly related to clinical diagnosis. Further hypotheses are: (a) all three categories will significantly differentiate between normal and clinical groups; (b) two of the categories, PO and PR, will significantly differentiate between neurotic and psychotic groups.

TAT Cards. Cards 2, 3GF, 4, 6GF, and 7GF were used. This particular short-form set includes the basic situations in which a woman participates during her lifetime. PO scores for this short-form set correlate .91 with scores for the entire series of 20 cards with these Ss (5).

Subjects. The TAT stories resultant from administration of the five cards were collected from 150 female Ss: normals, neurotics, psychotics, 50 in each group. The normal Ss were student nurses who had completed one year of college prior to testing. "Normality" was operationally defined in terms of MMPI T scores all under 70. The rationale and evidence for use of college students has already been presented (2).

Neurotic and psychotic Ss were chosen in terms of previously determined criteria: (a) hospitalized psychotics; outpatient clinic neurotics; (b) diagnostic agreement between psychologist and psychiatrist; (c) independent diagnostic formulations; (d) diagnosis: neurosis or schizophrenia. It should be noted that in the original study with males the neurotics

were hospitalized patients. The Ss were all between the ages of 20 and 40, with I.Q. scores of average or better.

Procedure. The 750 stories obtained from the three groups were scored for each of the three scoring categories and for length. The five stories from each S were treated as a unit. Thus, each S had three separate scores, one for each category derived from all five stories. Scoring was done following brief, mimeographed directions by the author and a clerk on a specially prepared score sheet.³ The stories were coded and randomized to ensure that the scorers would not be aware of the group to which any record belonged.

RESULTS

Reliability. The present study is concerned with two kinds of reliability among scorers: (a) scoring category reliability; (b) reliability of the items composing the categories. Scorer reliability was determined by means of per cent of agreement. This statistic makes no assumptions concerning the characteristics of the data. Discussions of the appropriateness of this statistic for projective techniques have been presented elsewhere by the present author (3, 4) and others (8).

Scoring category reliability was determined using two scorers on a randomly selected sample of 10 Ss from each of the three groups. A total of 150 stories were scored for reliability. The reliability of scoring category PO was 94 per cent; PR reliability was 91 per cent; PP reliability was 76 per cent. The overall scorer reliability for these three scoring categories was 91 per cent.

The reason for lowered agreement in scoring PP is attributable to ambiguity present in the definition and scoring directions. This scoring category does not provide criteria to be looked for in the TAT story but requires judgment and choice of words

³ The author will provide mimeographed copies of the scoring directions and score sheet upon request.

and phrases to be scored. The substantial increase in per cent of agreement over the original study with males is probably due to enhanced clarity of directions and to use of a reliability sample which was twice as large.

The reliability of scoring the separate PO items ranged from 91.3 per cent to 100 per cent; the scorer reliability for the separate PR items ranged from 80 per cent to 100 per cent.

Validity. The validity of these scoring categories is provided by differentiation between groups of Ss. The present data, as in the original study, met the assumptions for a nonparametric median test. Table I shows the median and range for each of the three groups on each scoring category. The scores in each category were placed in rank order and combined medians were obtained for the groups being compared: normals-neurotics; normals-psychotics; neurotics-psychotics. The number of cases falling above and below these combined medians was determined by interpolation. Chi-square was then used to determine differences between groups (Table II).

TABLE I. Median and Range for Normals, Neurotics, and Psychotics on Each Scoring Category

Category	Group	Median	Range
PO	Normal	27.50	16-35
	Neurotic	18.50	10-25
	Psychotic	8.50	5-18
PR	Normal	14.25	11-15
	Neurotic	9.67	5-12
	Psychotic	5.40	1-11
PP	Normal	.25	0-13
	Neurotic	6.10	0-30
	Psychotic	8.50	0-29

These results support the primary hypothesis that all three scoring categories will significantly differentiate between groups. The secondary hypotheses are also substantiated. PP distinguishes normal from clinical groups;

PO and PR distinguish the neurotic group from the psychotic group.

TABLE II. Summary of Median Test Results on PO, PR, PP Scores of Three Groups: Normals, Neurotics and Psychotics

	Category and Group	Comb. Med.	Above Med.	X ²	p
PO	Normal		43.5		
	Neurotic	22.50	9.0	47.7	<.001
	Normal		49.5		
	Psychotic	16.50	1.0	94.1	<.001
	Neurotic		44.7		
	Psychotic	12.10	6.2	59.3	<.001
PR	Normal		48.2		
	Neurotic	11.90	14.1	49.5	<.001
	Normal		50.0		
	Psychotic	10.84	1.0	96.1	<.001
	Neurotic		44.3		
	Psychotic	7.68	15.8	33.9	<.001
PP	Normal		6.5		
	Neurotic	1.50	46.0	62.6	<.001
	Normal		7.1		
	Psychotic	1.30	45.4	58.8	<.001
	Neurotic		23.8		
	Psychotic	6.84	29.5	1.3	.....

The influence of length upon these TAT scoring categories does not appreciably affect the discriminatory power of the three scoring categories (2). Product-moment correlations were done between each of these scoring categories and length for each group. Significant correlations were obtained for some groups on all three scoring categories. However, the magnitude of both the correlations and the chi squares indicates that a correction for regression which takes trend into account does not affect the significance of any of the differences between groups.

In order to determine the possible influence of intelligence upon the PO, PR, and PP scores, product-moment correlations were calculated for each of the three groups with available I.Q. scores (Table III). Zero-order correlations were obtained for the normal group between all three scoring categories and Wechsler-Bellevue Vocabulary Estimated I.Q. scores. The correlations between PO and PR scores and Wechsler-Bellevue I Full Scale I.Q. scores for neurotics approached significance at the .05 per cent level. None of the correlations for the psychotic group was significant. It is suggested that I.Q. scores and these TAT scoring categories are not related *per se* but that those neurotics with higher I.Q. scores tend to be more in contact and thus obtain better TAT scores.

TABLE III. Product-moment Correlations Between Intelligence and TAT Scoring Categories PO, PR, PP for Three Groups, 50 Normals, 34 Neurotics, and 40 Psychotics

Category	Group	Intelligence
PO	Normal	.02
	Neurotic	*.34
	Psychotic	.22
PR	Normal	.04
	Neurotic	.31
	Psychotic	.23
PP	Normal	.06
	Neurotic	.05
	Psychotic	.00

* Significant at .05 level of confidence.

The statistical fact that a scoring system successfully differentiates between groups does not necessarily mean that a given scoring system can be used for prediction. This truism has been emphasized recently in a similar context (9).

An approximate prediction measure was employed to determine the extent to which individuals are identified correctly by each of the three scoring categories. Two medians were selected for each scoring category as criteria: normal-neurotic and neu-

rotic-psychotic. Scores above the normal-neurotic median were given 0; scores falling between the normal-neurotic median and the neurotic-psychotic median were given 1; and scores below the neurotic-psychotic median were given 2.

Table IV shows the results for each scoring category. These figures may be combined in various ways to provide the discrimination of each scoring category with each cut-off point, 0, 1, 2. Maximal discrimination is found by selecting a cut-off score which exaggerates the differences between groups. Thus, PO is the "best," i.e., maximally discriminating category on which 88 per cent of normals had 0, 72 per cent of neurotics had 1, and 88 per cent of psychotics had 2 scores.

TABLE IV. Percentage of Ss in Each Group Receiving Scores of 0, 1, 2 on Each Category

Group	Score	PO	PR	PP
Normal	0	88	96	87
	1	12	4	8
	2	0	0	5
Neurotic	0	18	14	8
	1	72	78	38
	2	10	8	54
Psychotic	0	0	0	10
	1	12	30	26
	2	88	70	64

DISCUSSION

Application of three TAT scoring categories to female Ss provided results almost identical to those obtained in an earlier study (2) with male Ss. Thus, the use of these objective scores for both male and female groups appears to have considerable diagnostic power. It is even possible that cross validation may enhance the diagnostic potential with female Ss as has previously occurred with males (6). It will be noted that the three scoring categories, PO, PR, PP, are directly representative of the three basic aspects of test behavior deemed sufficient for development of objective scoring for projective techniques.

Certain controversial theoretical assumptions concerning personality, i.e., the concept of Personality Orientation (1), antedate the rationale on which these scores were developed. However, the use of these categories demands no particular persuasion with regard to personality theory. Similarly, the development of objective scores for the TAT does not imply abandonment of content analysis, or of any system of ordering the personality data provided by the TAT. These scores are merely a formal aid to clinical diagnosis and not a substitute for any approach to TAT interpretation.

Further research in this area must concentrate on the behavioral and psychological correlates of these TAT scoring categories. In addition, such phenomena as intracard order of PO items, intercard PO item relationships, and relative weight of PO, PR and PP scores in the "Tatogram," or TAT personality profile, need investigation. Validation of an objective scoring system for the TAT, or any projective technique, should be in terms of personality description as well as diagnostic utility.

SUMMARY

An objective TAT scoring system, consisting of three scoring categories, Perceptual Organization (PO), Perceptual Range (PR), and Perceptual Personalization (PP) was applied to three female groups, normals, neurotics, psychotics, 50 in each group. The scorer reliability was 91 per cent. A nonparametric, median test, chi-

square analysis indicated significant differences between normal and clinical groups for all three TAT scores; PO and PR significantly differentiated all three groups. Length of story was taken into account and the relationships between I.Q. scores and TAT scores were determined. A prediction measure indicated that PO was the maximally discriminating category and successfully isolated 88 per cent of normals, 72 per cent of neurotics, and 88 per cent of psychotics. This scoring system constitutes a formal aid to content analysis and further validation is necessary.

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The Mosaic Test: A Second Review¹

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Though an interest has been maintained in the Mosaic Test over a 25 year period from 1929 when Lowenfeld developed her test, the majority of the more than 55 references have appeared since 1950. Moreover, if one excludes cursory (4, 32, 34) or now incomplete (1, 12) reviews, passing references to the test (5, 14, 16, 19, 24, 27, 37, 38), brief mention of its use in case studies (2, 40) and descriptions of the method of administration (3, 21, 22, 25, 54) from consideration, there are only about twenty-five papers which make an "original" contribution and two of these are no longer available (55, 56). The cost of the test material, difficulty of recording the test data and previous lack of a satisfactory scoring system have probably been the major drawbacks in the development of this "performance" projective test. Then too, it was not until 1954 that Lowenfeld published her text (23).

Apart from a recent publication describing an elaborate procedure of limited practicality (3), the test instructions, methods of recording test data and a description of the commercially available set have been considered in a previous review (8).

While a film strip in color is now available (54) which illustrates the fundamental, abstract, representational and conceptual types of patterns, the use of color and a number of neurotic patterns, it does not, apart from being in color, appear to offer a contribution beyond the illustrations of

Colm (6), Lowenfeld (20), Wertham (45) and Wertham and Golden (46).

CLINICAL CONDITIONS

Major attention was given to the findings obtained in various clinical conditions in a preceding review (8) and there have been but a few contributions to this aspect since. A recent study purports to demonstrate that the test is of minimal value in discriminating between diagnostic categories (36), however, since there is a remarkably inadequate selection of cases, the conclusion does not appear warranted. By contrast, Stewart and Leland (43) found certain types of Mosaic design (pre-fundamental, hollow-circle, rigid stereotype, asymmetrical abstract edge designs etc.) to be associated with maladjustment in first grade school children and further, that these features possessed predictive validity in a two year follow-up.

Previous findings on the manic phase of manic-depressive psychosis are supported by an unpublished study of recovery from this condition (33) which also demonstrates the use of retest changes following therapeutic progress. In a neatly devised study, Maher and Martin (26) were able to demonstrate that there is a meaningful relationship between the presence of cerebro-arteriosclerosis in a physical examination and certain Mosaic patterns defined in accord with the "organic" signs of Wertham (45). Finally, Moran's investigation (31) is of more theoretical than clinical or diagnostic interest. It seems reasonable to state that the validity of the Mosaic "diagnostic" signs has certainly not been properly established. And there are but a few examples of careful studies to this end to date (28, 41, 45).

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Because of its non-verbal nature, the Mosaic test is well suited to evaluation of the deaf. Several graduate students at the Catholic University of America have made studies in this area (39, 58, 59). Schonberger (39) matched groups of deaf and hearing subjects, exploiting the test characteristic or "sign approach" to the fullest, and demonstrated 19 significant comparisons out of 54. The deaf were more inclined to make simple, small, compact designs in a relatively short time suggesting constriction, withdrawal tendencies and an overly strong control of emotions.

THEORETICAL CONSIDERATIONS

"Homemade" sets continue in use, that of Bowen (3) utilizing ten shapes in ten colors, thereby varying the most from the standard set of Lowenfeld. In complicating the test material it would seem that there is a considerable danger of raising the "threshold level" (8, 30) thus making the test less sensitive. That is, designs reportedly typical of specific neuropsychiatric disorders might be obtained less frequently and only at a more advanced stage of the condition. Since the capacity of the test to elicit diagnostically typical designs is said to be its strongpoint (7, 8, 32, 45), it follows that modification of the test material should only be made when it is clearly shown to be advantageous.

Then, too, Lowenfeld based her test material on the geometric shapes typical of European folk design and embroidery (20, 22, 54) after noting that these could be reduced to five "fundamental" shapes (mathematically inter-related) and six colors.

To disregard the assumption that the test material is "culture loaded" (23) without investigating, perhaps, its most interesting potential virtue, seems neither proper nor sound. True, Rorschach test material can be varied considerably without influencing response significantly (11) and the generalization that the psychological structure of the subject governs his

response with but minimal dependency on the formal characteristics of the test material may apply within a number of types of projective techniques. However, caution should prompt us to check the assumptions basic to a test before extensively inquiring into the specificities of its application. In particular, some of the discrepancies reported may be attributable to variation of the mosaic shapes arising from a disregard of their original cultural selection.

The fact that the mosaic is a "performance" projective test not dependent on graphic techniques appears to suit it ideally to anthropological field studies, two of which have included it in their battery of projective tests (53). How appropriate its use with non-European peoples is, remains to be seen.

Wertham makes a most provocative statement about the Mosaic Test yet it is only mentioned by two investigators (47, 52) and has passed without direct inquiry. He considers that whereas "the Rorschach test functions predominantly within the sphere of the study of the structure of the personality and of Freudian categories, the Mosaic Test is operative primarily in the sphere of pathological processes and of Kraepelinian categories" (45). Reiman (35) makes the distinction in more pragmatic terms: "Unsystematic comparisons of Rorschach and Mosaic responses, for example, suggest that the latter may indicate actual functioning level, whereas the former disclose basic personality structure." In keeping with this distinction, Diamond and Schmale (7) report that no correlation between the Rorschach and Mosaic tests has been established. Moran (31) attempted to demonstrate similarities in the approach and control factors of these two tests, but only obtained significant differences. However, notwithstanding the suggested basic theoretical difference, Zucker (52) and Colm (6) describe a number of aspects of mosaic construction which they con-

sider comparable to specific Rorschach factors, to the point that the latter states: "The Rorschach and Mosaic findings correspond in most cases. One test usually confirms the findings of the others." The explanation that: "The Mosaic and the Rorschach interpretations are based on common elements in the test-projections which express the inner structure of personality difficulties . . . (but whereas) . . . the Rorschach provides an opportunity to see the personality in reaction to complex intellectual and emotional stimuli, the Mosaic provides a greater opportunity to observe in a quick and direct way, the personality in *spontaneous* action.", does not seem sufficient reconciliation for this inconsistency of theory and practice.

If a basic operational difference between the two tests could be clearly established, it would, quite apart from the inherent clinical advantages, open new vistas for the student of personality. A demonstrated *lack* of equivalence between two projective tests would be of invaluable assistance to the experimental study of changes that occur within the personality during various phases and types of mental illness (9). Thus, rather than focusing our attention on the similarities that can be observed among projective tests in a battery (2, 40), we may be well advised to search for major differences between them and then pursue these implications of internal discord within the subject.

Several major investigations in the Mosaic literature have been directed to theoretical issues. Martin (28) presented chromatic and achromatic sets to groups of Psychotic Labile, Psychotic Inhibited, Non-Psychotic Labile and Normals, in a study of the color-affect thesis. His findings seem of considerable interest. His Labile Psychotic group in both presentations used more tiles, made more designs and took longer to do them than the Psychotic Inhibited. They also showed a greater color effect on the number of tiles, number of de-

signs, time and their use of homochromatic color. With little exception the predictions from current color-affect theory were found to be valid for the psychotic groups. However, and this seems particularly important, the predictions could *not* be validated with his non-psychotic groups. Martin cautions that direct extension of the color-affect principles into the non-psychotic area of behavior may well lead to error.

Investigating schizophrenia from a theoretical point of view, Moran (31) defined rating scales of specific aspects of Mosaic productions in terms consistent with the concepts of schizophrenia of Angyal, Diamond and Schmale, Goldstein, Wertham, Zaslav, and Wolff. He found that all the theories represented by the rating scales can be used to distinguish schizophrenia from the normal.

RELATION TO INTELLIGENCE

The relationship of Mosaic test performance to measured intelligence is under considerable debate. While scattered relationships are reported by some authors, they are not generally agreed upon. Wertham (45) considers that the test provides a measure of functional intelligence and this is corroborated, at least for children (51). It was suggested (50) that the Mosaic would probably correlate more closely with a performance test of intelligence, however, no correlation between Mosaic content and the Cornell-Cox could be demonstrated (13) and likewise, estimates of developmental level from the Mosaics of children showed insignificant correlation with the Goodenough-DAP MA scores (35). Some authors consider that at levels of mental ability higher than an MA of eight years, no relationship will be observed between psychometric test results and success on the mosaics (7, 35, 43) and therefore, caution against the use of adult standards below this mental age.

However, Wrong (51) found an increasing complexity in the Mosaics of

children up to the MA of eleven. On the other hand, none of the quantitative variables showed a reliable difference among the MA levels in her study. No correlation of Mosaic content to Wechsler-Bellevue IQ could be shown among adolescents (13) and aesthetic score and number of tiles employed did not correlate with intelligence in adults (12, 15). Others, report more positive results. A general relation between increasing MA and complexity of pattern and excellence of design among mental defectives was demonstrated by McCulloch and Girdner (29). In another study of mental defectives (41), coherence and accuracy were shown to be related to MA. Fairly strong evidence of a positive relationship for children (50) and mental defectives (29) between the revised Binet MA and MA estimates based on Mosaic designs is available. In the former study of a group of 88 defectives, ranging in Binet MA from 5 to 12.9, a very significant $+ .43$ correlation was obtained. The latter study employed the Mosaic ratings of 21 judges on the Mosaic productions of 15 children all of CA $10 \pm .5$. Correlations with the Binet IQ ranged from $+ .73$ to $+ .13$, with an average of $+ .61$. (Incidentally, it was noted that clinical experience bore no relation to accuracy of ranking!). As a check on this finding, two judges rated the mosaic designs of 45 children referred to psychiatry. They obtained an average correlation of $+ .66$ between their ratings and the Binet MA (50). In developing a scoring system for the Mosaic, Wideman (47, 49) studied the influence of intelligence on test performance. While his normal group did not cover the below average range of intelligence, there were 107 subjects in the group. Only three of the 39 scores showed a significant phi coefficient in relation to the Shipley-Hartford vocabulary scale: total number of pieces, $.31$; rating of complexity, $.30$; rating of aesthetic quality, $.46$ (latter finding op-

posed to Himmelweit and Eysenck (15)).

Whether the Mosaic test is a valid measure of functional intelligence in adults has not actually been established. Certainly, it possesses but minimal relation to standard intelligence test scores. Among children though, there is scattered, but fairly reasonable evidence that performance on the Mosaic test bears a relationship to intelligence. Inasmuch as changes in performance related to age are also evident, it would appear that the test has some sensitivity to intelligence during the period of major growth and development (i.e., until the CA of 14 to 16 approx.) but after that is of little use in this regard.

AGE TRENDS

All studies which consider changes in test performance related to age report positive findings throughout childhood and preadolescence. Several trends have been noted up till 15, but after this, age is apparently no longer a dependent variable. In a split-half evaluation of his normal control group (mean age 25.1, sd. 7.7), Wideman (47, 49) found only one significant difference in 39 attributable to age; a higher % of chromatic color in the elder half. There are frequent reports of differences between the performance of children and adults. Among children, incoherent designs are more frequent (17, 29, 35, 42), in fact, up to age seven approximately 45% of their designs are likely to be incoherent (17, 42). Similarly, there is an increase in frequency of abstract designs with advancing age in children (17, 29, 42). By age 15, as many as 90% of the designs may be abstract. The generalization that adult standards do not apply to the test performance of children below eight (7, 35), is supported by evidence that above this age, about 80% of designs are successful (17). By 12 about two-thirds of designs are compact (17). Whether the size of the design or the number

of tiles used bears any relation to age, is in dispute (35, 51). Symmetry of color and form (35, 50, 51) and complexity of content (50, 51) also increase with age in childhood. Woolf and Gerson (50) found a relation between quality and CA up till age 11 and offer a description of age changes by one year intervals from three to ten inclusive. Thus, varying somewhat with the author, and with aspects of the test considered in each study, age trends appear to level off at 8, 11, or 15. From this, it is obvious that there will be test differences between children and adults, even when MA is held constant (51). Comparisons between adolescents and adults, however, are not likely to reveal any significant or major differences attributable to age (17, 47, 49).

SEX DIFFERENCES

Little in the way of sex differences has been reported and these are apparently attributable to the differing rate of maturation between the sexes in childhood. Diamond and Schmale (7) state that no sex differences are evident in the test performances of adults. Wideman (47) reports "almost negligible" differences (more adult women did not use black, more frequently used a large proportion of white), while Kerr (17) noted a lessening of sex differences at adolescence. A greater incidence of abstract and scattered designs among girls were the only obtained sex differences in one study (35). However, these corroborated the earlier findings of Kerr (17), in other words; boys more frequently made concrete and compact designs. Possible sex differences in the deaf have also been studied (58). As Lalonde (18) concluded: "the attempt to delineate between masculinity and femininity with the Mosaic test through the study of 20 characteristics observed in 100 protocols proved to be rather unsuccessful. None of the items studied were found to be important in differentiating the sexes ..." She had employed college men and

women (50 - 50) with appropriately distinguishing scores on the Mf scale of the MMPI.

CULTURAL DIFFERENCES

The report of Stewart and Leland (42) is apparently the only direct investigation of possible cultural differences in mosaic test performance. Judging from their striking differences between American and English children and adolescents, it would appear that this is an area which warrants much closer study (23) (see above). They found that the maturational trends were most distinct among the English, that they made many more abstract designs (of those symmetrical in both form and color, ages 13 to 18, 82.6% vs. 23.6%) and that they did not produce relatively unorganized patterns (fundamental designs etc., ages 13 to 18, 0 vs 20%). From the earliest age the Americans made considerably more representational patterns (ages 8 to 11, 71.6% vs 9%). Recently, they confirmed their findings for American children (43); 56% of the Mosaics of 100 first grade American school children were representational, only 6% made abstract symmetrical designs.

Interestingly, Kerr (17), in studying the types of patterns made by adults, found no difference between working-class and university subjects.

SCORING CATEGORIES

A major drawback to research with the Mosaic test has been the lack of an objective scoring system (8, 34, 47, 49). Several authors present a descriptive list of categories by which they attempt to classify designs. These lists overlap to a considerable extent and suffer from minor variations personal to the author in addition to the inherent defect common to all qualitative descriptions: lack of objectivity and hence of uniformity. In individual studies, these limitations can be overcome, as Woolf and Gerson (50) and others (26, 31) have admirably demonstrated. Stable evaluations are pos-

sible by carefully defining and restricting the rating. Moran (31) in fact, obtained inter-judge reliabilities of .90 and .88 for two of his rating scales (control and rigidity-fluidity). Thus, estimates of MA show reasonable correlations with MA as measured by the Binet test (29, 50) for a number of judges of varying experience with the problem and/or the Mosaic test. But in the matching of "character sketches" with Mosaic designs, the results are less conclusive (12, 15) and apparently entirely dependent upon expert opinion. The insidious weakness of qualitative ratings though, is their susceptibility to redefinition (often unintentional), which reduces the comparability of investigations. The use of a "sign approach" such as Wertham's (44, 45, 46) while perhaps encouraging uniformity of rating, is seriously limited in its application, being appropriate, in the main, only to the study of serious mental disorders. Yet, it must be noted that his "organic" signs have been shown to possess a certain validity in a well planned study by independent investigators (26).

It has remained for Wideman (47, 48, 49) to develop a preliminary scoring system that is objective, reliable and valid in the psychometric sense. Combining selections from the literature and his experience with the Mosaic, he outlined 45 items, later refining and reducing these to 39 scoring categories. High coefficients of consistency demonstrate that all but one can be consistently scored. Furthermore, 15 of the categories yielded very significant and nine, significant retest coefficients of consistency. Most categories dealing with % of a particular color or shape and localization on the tray proved unreliable, also "aesthetic quality". Those categories that proved reliable (2/3 of them) did so to an extent equivalent to Wechsler-Bellevue subtests. As might be expected (10), the retest consistency of the categories was higher among psychiatric patients than normal subjects. In general, the

more complex scoring categories appeared more meaningful psychologically than the simple ones. Eleven of the categories differentiated "organics" from normals, nine differentiated schizophrenics from normals, and four differentiated neurotics from normals to a very significant degree. Thus, Wideman's scoring method appears to hold considerable promise, particularly if it is refined by dropping the unreliable and non-differentiating items and by condensing intercorrelated items.

SUMMARY

A previous review (8) described the test material, instructions, methods of recording the data and the ("diagnostic") use of the Mosaic test in clinical conditions. Subsequent contributions to these aspects are noted, but the present review is focused principally on: theoretical considerations, the relationship of Mosaic test performance to intelligence, age, sex and culture; and the development of a scoring method.

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An Attempt to Sort Rorschach Records From Four Cultures¹

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In 1947 the senior author while participating in a field study of Navaho and Zuni war veterans² had the opportunity to collect a series of 156 Rorschachs and other projective test data from individuals in four cultures situated in the same part of New Mexico. The cultures were the Navaho, the Zuni, the Mormon and the Spanish-American. Since these materials lent themselves to cross-cultural comparisons, an analysis of the differences among the four groups of tests was undertaken with the aim of relating them to differences in the four cultural patterns. In addition it was hoped that a description of the four modal personality patterns would emerge from the tests. As the analysis of the material progressed an unexpected situation became apparent. The individual variability within the cultures on every personality dimension studied was so great that it was very difficult to find trends which would characterize any large portion of the subjects within any of the groups. At the same time differences among the central tendencies of the groups, on the variables studied,

while present, seemed disappointingly small. This situation raised the possibility that the data would not support the prevailing expectations among workers in the field of culture and personality, that the personality characteristics of individuals in the same culture group tend to cluster about some central or modal type and that such types differ widely from group to group. Such expectations had good theoretical bases in the work of writers like Kardiner, Linton, Mead, Kluckhohn, Benedict, Hallowell and others, but convincing empirical demonstrations to support them were more scarce.

The research aim was therefore re-oriented from an attempt to discover what were the personality differences among the four groups to the question of whether substantial differences did exist and whether any of the groups was homogeneous enough with respect to some personality variables to support the modal personality hypothesis. The latter questions seemed more appropriate to our present stage of knowledge since they did not prejudice the issue as did the former one.

Preliminary analysis of the Rorschach data was somewhat inconclusive.³ Of 48 comparisons between pairs of cultures, 13 yielded differences significant at the 5% level of confidence. Analysis of variance and chi-square tests showed that of 14 Rorschach variables, there was culture variability in five of them, FC, CF,

¹ This study was supported by a grant from the Laboratory of Social Relations, Harvard University. The writers wish to express their special appreciation to Dr. Clyde Kluckhohn for his stimulating suggestions and support. Dr. Frederick Mosteller and Goodhue Livingston gave invaluable help with the statistical problems and Drs. John Adair and Evon Z. Vogt, Jr. provided assistance in the field phase of the study without which the data could not have been collected.

² This study was carried on by the anthropologists John Adair (1, 2) and Evon Vogt, Jr. (2, 13).

³ These results are described elsewhere (6).

T/R, FC' and m which was significant at the 5% level. At the same time however, the individual variability within the cultures on all of the variables was extremely high so that despite the substantial number of significant differences the overlap between the cultures was very great. In addition the cultures were quite similar with respect to the content categories and popular responses. In drawing conclusions from these results it seemed possible to emphasize the differences which were demonstrated, and infer that the modal personality hypothesis was supported. On the other hand it seemed equally plausible to emphasize the similarities among the groups and the high degree of heterogeneity that existed in each of them and thus find support for the opposite conclusion.

It was in this somewhat indecisive situation that the sorting test was conceived as a method that would allow us to choose between the conflicting alternatives. Instead of asking whether the Rorschachs in the four cultures were different, we could now ask whether they were different *enough* so that they could be distinguished from each other. Instead of asking whether the Rorschachs from the same culture were similar to each other we could now ask whether they were similar *enough* so that they could be matched as coming from the same group. The sorting and matching procedure should supply a criterion on the basis of which it might be possible to decide on the applicability of the modal personality hypothesis. The experiments on which this paper reports consist of three attempts at blind sorting of Rorschach tests into the four cultural groups. Two of the experiments are clinical in nature in that experienced clinicians performed the sorting. The third attempt was made with the use of a statistical technique known as the "discriminant function" test. The circumstances in which the Rorschach tests were administered are described

in Kaplan's monograph mentioned above (6) and that description will not be repeated here. It should be said, however, that both the Navaho and the Zuni cultures are vigorous intact cultures which have retained to an unusual degree their separateness and integrity. For a description of these groups the reader is referred to Kluckhohn and Leighton's work (7) on the Navaho, Goldman's essay (3) and Adair's monograph (1) on the Zuni. The Mormon group from which our sample was drawn consisted of the community of Ramah. This town of 200 individuals was founded in 1883 by settlers from Salt Lake City and later augmented by an influx of Mormons who had left their settlement in Mexico. The population is quite stable and very self sufficient. The Spanish-American sample was drawn for the most part from the town of Grants, New Mexico. This town of 3000 consists mostly of Spanish-Americans and is the center of a farming district. Only a small part of the Spanish-American population is indigenous most of it having arrived in the past decade from small nearby villages. Only two individuals in our sample had been born in Grants and fifteen had arrived there during the past ten years.

PROCEDURE

For the first two experiments 24 Rorschach records were selected, six from each of the four cultures. In the total sample from which the 24 tests were chosen half of the individuals were veterans and half non-veterans. In order to rule out this difference as a source of confusion only the Rorschachs of veterans were used. It probably would have been more correct to use the non-veteran Rorschachs since these were presumably more representative of their cultures. The veterans were chosen, however, because the field workers were more familiar with them and thus might better understand the sorting. It was done on individuals who were well-known to

us. It was for this reason also that we departed from randomness in the selection of our sample. In three of the groups whose members were about equally well-known to us the six Rorschachs were chosen by random numbers from the veterans' Rorschachs. In the Zuni group, however, the Rorschachs of the six individuals best known to the experimenter were utilized. It is difficult to say whether this biased selection of the six Zuni records prejudices the results in any way. The main bias of these records is that they are probably somewhat more expressive than most Zuni Rorschachs. All identifications were removed from the records, including remarks in the record itself which might have given away the culture from which it came.

One of the writers⁴ who will be referred to as "A" in this paper, performed the first experiment. The conditions of this experiment were the most rigorous possible. The judge was not told anything about the Rorschachs beyond the fact that four cultural groups were represented. Her task consisted of two steps. First she was to separate the 24 records into four meaningful sub-groups. In the second part of the experiment the 24 Rorschach records were divided into two parts by the use of random numbers. The first 12 were then grouped according to cultural membership with three records in each of the four groups. These groups were not identified. The judge was asked to match each of the 12 remaining records to one of the four groups. Our idea was that if the Rorschachs within a culture were similar enough to each other, the already sorted records would provide cues which would facilitate the correct completion of the sorting.

The second experiment was performed after the first was completed and the results had been obtained and interpreted. It is by and large a duplication of the first with one impor-

tant change. Another of the writers,⁵ known here as "B," attempted the sorting in this experiment. In contrast to "A," she knew the names of the four cultures and had had some contact with the Navaho and with the Hopi, a culture similar in many ways to the Zuni. In addition, she had done some work with Rorschachs of Hopi children (12). This difference, however, had important consequences since it changed the psychological task from one of finding what similarities existed within the sub-groups of the 24 records to one of finding the records which best fit to a set of preconceived expectations.

The third sorting test performed was a statistical one, in which the "discriminant function" technique was applied to see if Rorschachs from the four different cultures could be placed correctly in four separate hoppers. This technique, (4) enables the research worker to combine the discriminating power of several variables by a rather complicated procedure involving multiple correlations.

The test was performed on the 116 Rorschach records available, in all possible combinations of culture pairs. The records from each culture were divided into two groups and those in the first group were used to derive the discriminant scores. For each pair of cultures the differences on eight variables $W\%$, $A\%$, T/R , M , $F\%$, FC , CF and R were examined and the three variables on which the "t" values were greatest were chosen. For the Navaho and Zuni they were, M , CF and $F\%$, for the Navaho and Mormons, FC , CF and T/R , for the Navaho and Spanish-Americans $A\%$, CF and T/R , for the Zuni and Mormons R , FC , and T/R , for the Zuni and Spanish-Americans T/R , M and $F\%$ and for the Mormons and Spanish-Americans R , M and T/R . These three variables were then combined into distributions of Z scores and the point in the two distributions which

⁴ Maria A. Rickers-Ovsiankina.

⁵ Alice Joseph.

would yield the fewest errors was chosen as a discriminating score. This score was then used in the sorting of the second half of the group of tests. A statistical test was performed to see whether the number of correct discriminations was larger than could have been expected by chance alone.

RESULTS

The results of the first test as given in Tables I and II indicate that both "A's" sorting and matching attempts were unsuccessful. In her attempts to sort the 24 Rorschach records into homogeneous groups, "A" felt that the records seem to separate most naturally into five groups rather than four. However, seven of the 24 records could not be placed in any of the five groups nor were they similar to each other. "A" did feel that a number of the records could be grouped into pairs and it will be noted that many of these pairs contain members of the same culture. In addition "A" in looking at the records from different perspectives formed four additional groups. In these groups there is somewhat greater success but the successes appear to be limited to the grouping of Mormons. Of the five

main groups, four contain records from at least three cultures. A fifth consists of three Zuni and one Mormon and while this result could undoubtedly be explained in terms of the operations of chance, there is the real possibility that this is a partly successful groupings.

"A" had little confidence that her classification would correspond to the cultural groupings although an examination of her notes indicates that her groupings were psychologically meaningful and consisted of records homogeneous with respect to some, psychologically rather basic, personality characteristics. These characteristics, however, happened to be represented in all four of the cultures. It is entirely possible that had the experiment continued with "A" seeking different bases for classification, she would eventually have found one that would coincide with the cultural variance. In the second part of the experiment, the matching problem, "A's" efforts were equally unsuccessful. As is shown in Table II only one of the 12 attempts at matching was successful. It is possible to say on the basis of this matching experiment that for "A" the records within each of the

TABLE I—"A's" Groupings of Twenty-four Unidentified Rorschachs

Five Main Groups				
1. Zuni Mormon Mormon Navaho	2. Navaho Spanish-American Mormon	3. Zuni Zuni Zuni Mormon	4. Navaho Mormon Spanish-American	5. Mormon Navaho Navaho Zuni
Secondary Comparisons				
S, S		M, Z		
N, M, S, M, M		M, Z		
M, M, M		M, N		
N, Z		N, N		
N, S		M, Z, S, M, N		
S, M		Z, S		
		M, M, Z, M		
		M, M		

TABLE II—"A's" Matching of Twelve Unidentified Rorschachs to Four Groups of Identified Rorschachs

Group A	Group B	Group C	Group D
Spanish-American	Mormon	Navaho	Zuni
Navaho	Zuni	Spanish-American	Zuni
Zuni	Navaho	Spanish-American	Mormon
Mormon	Navaho	Mormon	Spanish-American

TABLE III—"B's" Groupings of Twenty-four Unidentified Rorschachs

<i>Navaho</i>	<i>Zuni</i>	<i>Mormon</i>	<i>Spanish-American</i>
Navaho	Zuni	Mormon	Spanish-American
Navaho	Zuni	Mormon	Spanish-American
Navaho	Mormon	Mormon	Spanish-American
Navaho	Mormon	Mormon	Mormon
Zuni	Spanish-American	Zuni	Zuni
Zuni	Spanish-American	Navaho	Navaho

TABLE IV—"B's" Matchings of Twelve Unidentified Rorschachs to Four Groups of Identified Rorschachs

<i>Navaho</i>	<i>Zuni</i>	<i>Mormon</i>	<i>Spanish-American</i>
Navaho	Spanish-American	Mormon	Spanish-American
Navaho	Zuni	Mormon	Zuni
Navaho	Mormon	Zuni	Spanish-American

four cultures were not similar enough to each other so that they could be identified as belonging together.

Tables III and IV indicate that "B," applying herself to the same task achieved considerable success. In her initial grouping "B" sorted 13 out of 24 Rorschachs correctly. Six out of 24 would be the mean number of hits expected by chance and the standard deviation of the distribution of random successes is 2.1. If we decide that we shall accept a result further than two standard deviations from the mean as sufficient to reject the hypothesis that this result could have occurred by chance, we find that "B's" sorting exceeds this criterion which requires 10.2 hits.

"B" was equally successful in the second task with 8 out of 12 correct. In this problem the mean number of correct matchings which would be obtained by purely random choice would be three, and the standard deviation of the distribution of such correct matchings would be 1.57.⁶ If we place our level of confidence two standard deviations above the mean figure, we find that 6.14 correct hits are required before we can reject the hypothesis that random variation only was operating. Since "B" exceeded this

figure, we must conclude that her eight correct hits constitute a successful matching of the records to their fellows from the same culture. These successes seem to us to be conclusive proof, established under extremely rigorous conditions, that the Rorschachs are to a degree similar within cultures and that they differ among cultures.

The results of the "discriminant function" test are given in Table V. Since the discriminating scores were fitted in ad hoc fashion to the particular distribution of scores in the A group (those upon whom the computations were made), it is necessary for us to disregard the substantial success that was achieved in these first sortings. Group B, however, provides a severe test of our ability to make correct discriminations on the basis of independently derived discriminating scores. Even here, however, there are some impressive successes. In two pairs, the Navaho and Mormon and the Navaho and Spanish-American, the cultures are plainly distinguishable, with almost 85% of the records being labeled correctly. In four other pairs, the excess of correct over incorrect placements may be accounted for by chance. The success of the discrimination between Navaho and Zuni, however, approaches the 5% level of significance very closely.

It would be interesting to compare the efficiency of the statistical technique for sorting with that shown by

⁶ The statistical problem involved in this computation has been worked out by Frederick Mosteller (8). This reference gives the formulas used to derive the mean number of correct matchings to be expected by chance as well as the variance.

TABLE V—Number of Correct and Incorrect Placements Made on Basis of the "Discriminant Function Test"

	Trial Scores*		Test Scores		Chi Square
	Correct	Incorrect	Correct	Incorrect	
Navaho-Zuni.....	16	8	25	14	3.70
Navaho-Mormon.....	20	4	19	2	13.05
Navaho-Spanish-American...	23	1	20	5	9.18
Zuni-Mormon.....	16	8	21	12	Not Significant
Zuni-Spanish-American.....	18	6	19	15	Not Significant
Mormon-Spanish-American..	20	4	11	8	Not Significant

A Chi Square of 3.84 is required for significance at the .05 level.

A Chi Square of 6.6 is required for significance at the .01 level.

* These scores show the number of correct and incorrect placements when a discriminating score was determined in ad hoc fashion so as to obtain the best results. This same discriminating score was applied to the test groups for a more rigorous test.

the clinical method as exemplified by "B's" sorting. However, the tasks performed by the two methods were not quite comparable since the "discriminant function" technique was used to distinguish between two groups while the clinicians were faced with the problem of dividing the records into four groups. The clinicians' task was much more difficult and it is therefore not possible to say which approach was the more efficient. Both approaches achieved some important successes. On the other hand both had failures. It is very possible that the two approaches were approximately equal in their successes in sorting. Although this cannot be proven in the present investigation, future studies can establish this point either by using the more elaborate "discriminant function" analysis in which more than two groups are differentiated or by simplifying the clinicians' task by presenting him with material from only two groups. If there is substantial similarity in the successes of the two approaches we might infer from this that the "failures" in discrimination were not the result of inadequacies of the technique but of the lack of differences between the groups.

The fact that "B" had considerable success in the clinical sorting and matching experiments and "A" did not, requires some discussion. "B" had developed, as a result of her work with and interest in anthropol-

ogical materials, a considerable amount of sophistication in analyzing such data. Knowing the names of the cultures and having at least a minimum acquaintance with them, she was able to view the 24 Rorschach records in terms which were relevant to the task of finding differences among these particular cultures. She was able to form in advance some conception, whether accurate or inaccurate of what a Navaho, Zuni, Mormon or Spanish-American record should be like and attempt to match the records to these conceptions. For example she believed that the Indians more frequently than the other cultural groups would treat the blot percepts as concrete reality and that the Navaho would be more prone to do this than the Zuni. She also thought that the Mormons would show more intellectualized defenses and that there would be a lower W% in the Navahos. Not all of her hypotheses were correct and some led to wrong placements. On the basis of her results we can say that her conceptions had some validity. For "A," the situation was very different. Not knowing which cultures were involved in the experiment she could have no preconceptions to which the Rorschach records might be matched. Instead she was forced to address herself to the somewhat different problem of whether the Rorschachs could be grouped in some psychologically

meaningful way. Even if these groups were psychologically meaningful, and an examination of "A's" notes reveals that they were, there could be no assurance that they would coincide with the cultural classification. "A" could not know which was the correct classification without some knowledge of the cultures. All we can conclude from "A's" failure is that the classification which was most salient Rorschach-wise did not correspond to cultural differences.

DISCUSSION

These results suggest that Rorschachs from the four cultures are different enough to be sorted with considerable success. This differentiation is more possible with some cultures than with others. It is facilitated by a knowledge of the cultures. What is the significance of such findings? First in importance is the proof offered that the Rorschachs of the four cultures are different from each other in meaningful ways and with this there is a strong presumption that certain personality characteristics of individuals in these cultures are also different. This taken together with the fact that within each culture the test protocols were similar enough so that they could be matched with considerable success might be viewed as a demonstration of the applicability of the "modal personality" concept. While no inferences may be made about the ratio of the area of applicability to the total personality processes, the fraction is at least a discernable one. In other words, although we are unable to tell whether the so-called "modal personality" comprises a large or a small part of all personality processes, it is not so insignificant that it is totally obscured by "non-modal personality" processes. Many workers in the field of culture-personality relationships may not be satisfied with such a limited claim. It has been generally assumed not only that modal personality characteristics exist but that they play dominant roles in the

total personality configuration. It has been our purpose here to test the narrower assumption and our results have indicated that it is correct. The more general assumption receives no support from these results. On the contrary, the difficulty of the task and the occurrence of negative findings in both clinical and statistical analyses indicates that this latter assumption may be incorrect. More detailed study of the exact nature and magnitude of the differences among the cultures is required before definitive conclusions may be drawn.

One possible objection to the conclusions we have drawn from the results occurs to us. An important source of confusion in the field of culture and personality has been the confusion of cultural processes with personality processes. This has resulted from a lack of sharpness in the differentiation of the two concepts. For many, culture and personality are so highly inter-related that they are indistinguishable. These writers, as pointed out by Seeman (10), have included processes which are clearly cultural, such as manners, or folk ways, in their analysis of personality differences between cultures. Research which is oriented to this framework will inevitably discover differences in "personality" which are in fact differences in culture. The research project of which the present study is a part, has been keenly aware of this danger and has attempted to meet it by utilizing psychological tests of a projective nature such as the Rorschach, the Thematic Apperception Test and the Sentence Completion Test. These tests are constructed so as to give the subject relative freedom to respond as he likes. The cultural structuring of his responses is thus minimized. However, the projective tests are a long way from being completely free from cultural influences. Implicitly if not explicitly the culture in no small degree defines the test situation and its requirements for the subject. The question that is important, even cru-

cial, for the interpretation of our results is whether it is possible that the differences among the Rorschachs from the four cultures upon which the sortings were based are attributable to varying ways in which the cultures defined the test situation. Such differences might then be interpreted as not reflecting personality differences but cultural differences.

In addition to the varying definitions of the test situation there exists the possibility that cultural influences may be imposed on the Rorschach performance through other channels. Certainly the modes of expression in the four cultures may vary even if the same language is used. An obvious factor is the difference in experiential matrices from which the Rorschach responses emerge. Individuals in one culture, for instance, the Navahos, may lack the knowledge of and experience with a great many artifacts of our civilization and so are very unlikely to include perceptions of such objects or situations in their responses. The Mormons on the other hand might not have the intimate acquaintance with and interest in the world of nature which the Indian groups are thought to have. Perhaps more subtle is the influence of the time-sense of the culture which may be reflected directly in the time scores of the Rorschach test.

With respect to the varying definitions of the test situation the only systematic difference that is striking to us is the apparent lack of involvement and motivation for outstanding performance on the part of many of the Spanish-Americans. This we first thought was a result of the commercial aspect of the test situation in this group in which most of the subjects were paid a dollar for taking the test. However, some of the records of subjects who were not paid seemed similar to those of subjects who were paid.⁷ Whatever the cause of their

definition of the test it seems clear that the Spanish-American subjects appeared not to be more than superficially involved, and were not attempting to give more than a minimum number of responses to the tests. These particular attitudes may very well reflect personality characteristics. On the other hand they may represent stereotyped attitudes in the culture.

One would like to be able to say how the Rorschach situation is defined differentially in these four cultures. Unfortunately this is very difficult to do at present. This may seem to be an inadequacy of our field work but one has only to ask whether Rorschach workers in our own culture are able to describe the psychological meaning of the test situation for each subject to find that this is not a simple matter. Although some investigators, among whom Schachtel (11) is a notable example, have given this problem their attention, by and large no satisfactory understanding has been reached.

Let us turn now to the varying experiential matrices as another type of cultural influence which may have contaminated our results. While there is considerable overlap in the kind of experience which members of various cultures have the differences in such experiences are substantial and might lead one to expect differences in Rorschach content. Such differences might form the basis of "B's" sortings even though they were not among the explicit factors mentioned by her. Fortunately some data are available to help us evaluate this possibility. In the study by Kaplan (6) previously mentioned, the four groups were compared with respect to certain content categories of which animal responses and popular responses are the most pertinent. The finding, surprisingly enough, was that in neither of these categories were there substantial differences among the cultures. With a few exceptions the animals frequently seen were the same in all four cul-

⁷ Spanish-American and Navaho subjects were with a few exceptions paid to take the test; Zuni and Mormon subjects were not paid.

tures, as were the popular responses. Although these results were derived from a larger number of Rorschachs than are studied in the present research, they provide us with some reason to doubt whether "B's" sortings were based on content differences.

While the extent of cultural contamination cannot be assessed satisfactorily, it is still possible to draw from our data some tentative conclusions, cautiously held and subject to revision if contrary evidence is forthcoming. Our procedures of analysis do reveal certain characteristic differences among the four cultures. It seems appropriate to formulate these differences in terms of the modal personality concept.

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The Use of Projective Techniques in Predicting Performance in Freshman Psychiatry¹

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PROBLEM

One of the important objectives of a dynamically oriented course in introductory psychiatry is to make the student aware of the influence of unconscious factors upon all types of behavior. It was presumed that if a student's initial receptivity to unconscious influences could be measured in some way, it might be possible to predict his success in the course as a whole.

Projective techniques are based upon the hypothesis that an individual who is presented with a highly ambiguous stimulus situation will have the opportunity to handle this situation in his own personal or idiosyncratic way. The interpretation of projective material requires the ability to see beyond the obvious and to demonstrate some sensitivity to the influence of unconscious factors upon responses to ambiguous stimuli. It was, therefore, decided to use a battery of projective test extracts to tap this kind of "receptivity."

PROCEDURE

At the first meeting of a class in freshman psychiatry, the students were presented with the following series of extracts of projective materials from a case. This material was as follows.

CASE OF MIKE (Male—Age 14)

Interpretation of Proverbs

1. (The burnt child dreads the fire.)
(Asks E. to repeat.) ("Once an unfortunate experience has happened to a

¹ The authors wish to express their appreciation to William J. Reiss and Al S. Morrison of the psychology department of the Norfolk State Hospital for their assistance in this study.

person, that person subconsciously makes a mental note—now wait, let me get that again—that connects that—uh—unpleasant situation with the particular stimulus that causes it and thereon tries to avoid that particular stimulus.")

2. (He travels swiftest who travels alone.)
("Sometimes, extra company, like extra baggage, can weight a talented person down.")

Sentence Completion Test

1. WHEN SHE REFUSED HIM, HE cried.
2. LOVE IS foolish.
3. AFTER HE MADE LOVE TO HER, HE died.
4. MOST OF ALL I WANT position.
5. SHE FELT BLUE WHEN he kicked her.
6. MOST WOMEN ACT AS THOUGH they are beasts.
7. WHEN I FEEL THAT OTHERS DON'T LIKE ME, I hate 'em.
8. WHEN I THINK OF MARRIAGE, I shudder.
9. FATHERS are stern.
10. MOST MEN ACT AS THOUGH they are better.

Blacky Test

Cartoon VI: "Well, I suppose Tippy's getting her tail cut off to prevent germs. Her tail sometimes drags in the dirt and picks up dirt, etc. There is nothing cruel about it. That isn't how they cut them off. If Blacky is an intelligent dog, he is watching with as much glee as possible because he realizes that maybe someday it will happen to him then, as it is a favor to Tippy now. He is actually realizing that this is the best thing and a profit for him to have it done too.

Cartoon XI: "Oh, I suppose he's dreaming of his—either his girl friend or his mother. Maybe an idealized shot—thought of his mother, what he'd like mama to be. No, not what he'd like mama to be actually. Well, I guess that's it. If he could have his own way. Or a girl friend when he's a knight.

Make a Picture Story Test

(Dream) "This man is picturing what he might be, and on this side, he's having a nightmare." "He might even picture himself as a king. He's pointing down for someone to polish his boots for him. You know, being stinky about it." (What will the outcome be?) "Oh, he probably goes back to his little \$35 a week bookkeeping job the morning after his dream."

(Bridge) "That man is trying to force that girl to jump off that bridge there and one woman is holding her hand in front of her face. Maybe she's screaming." (What will the outcome be?) "Oh, I suppose the policeman would either shoot the man or stop him. Her screams bring the police. She tries to help if she's exceptionally brave, she probably wouldn't scream. She'd stop him in the interests of humanity. I should find a policeman, but none are running; they are all standing at attention. (What is the man's motivation?) "You never can tell. It may be a jealous husband or revenge for something she did—one of his acquaintances. Just that he doesn't like her for some reason."

(Selects Landscape) "This one's a pretty picture. This is just a nameless figure reaching for the sun, you know. It's not just a person, it could be a symbol. Science, searching for the truth. It's just the relative truth in our times. A symbol for the act of going forward, going to attain higher goals."

They were given the following instructions:

"You will be shown some extracts from a battery of psychological tests administered to a fourteen year old boy called Mike. Please put your name in the upper right-hand corner of the front sheet and the date in the upper left-hand corner.

On the second sheet, we would like to have your impression of what kind of person this boy might be. We realize that you have had no training in the interpretation of this kind of material, but would like to have your spontaneous reaction and associations at this particular point of the course. You might include some mention of this boy's intellectual functioning, some description of his attitude towards other people and whatever personality traits you might have found in reading the above."

"The stories given to the Blacky test and the Make A Picture Story test are stories made up by the patient about pictures which you will be shown on the screen. In the

Sentence Completion test, the part in capitals is read to the patient and he is asked to complete the sentence with the first thing that comes to his mind. In the interpretation of the proverbs, the proverb is read to him and he is asked to say what people mean when they say that. You will be given fifteen minutes in order to finish this task."

The students then proceeded to write a personality description of Mike on the basis of the instructions cited above. A ten-point scale was then developed for rating the interpretations of the individual students for statistical purposes. The points included in the scale were: (a) noting that the boy had above average intelligence, (b) noting that intelligence was used as a defense, (c) detecting the presence of inferiority feelings or defensive superiority, (d) noting the presence of frustrated strivings for independence, (e) mentioning the presence of a specific conflict with women, (f) taking into account the boy's age in modifying the interpretations of the material, (g) some description of the paranoid process, (h) some explanation of Mike's problems on the basis of parents, difficult home situation, etc., (i-j) some attempts at giving an integrated explanation of the total personality.

There were 80 students in the group and each one of them was rated on his interpretation of the material separately by two judges. First, a sample of 17 cases was taken out and rated separately by the two judges in order to measure the reliability of the rating scale. Taking all items into account, there was an overall agreement between the judges on 78 per cent of the items. The number of disagreements on the various points of this scale were fairly well scattered, there being no more than five cases of disagreement on any single item. The two judges then compared ratings, making panel judgments on each student and developed a guide to accompany the rating scale in hopes that this would increase the reliability of their judgments. A sec-

ond sample of 17 students was then selected and the procedure reported above was repeated. In this sample, the over-all agreement was 82 per cent and was not essentially different from that of the first sample. It was, therefore, concluded that the reliability of the rating scale, although adequate for present purposes, was not sufficiently high so that only one judge could be relied upon to make accurate ratings. It was, therefore, decided that all 80 students would be rated by both judges and that any disagreements would be resolved through a process of panel discussion and review.

At the end of the two quarters of instruction, 54 of the freshmen were once again given the "Mike" material, with essentially similar instructions except where modifications were necessary. This material was also rated by the panel method described above.

The Mike material was also administered to a group of seniors during the same semester in order to see whether seniors would demonstrate significantly different scores from freshmen. The main data analysis, however, consisted of a comparison of the initial ratings achieved by the freshmen with their scores on the final examination in the course, a multiple-choice test.

RESULTS

A comparison of those students who were rated on their performance at the end of the course, as well as at the beginning, demonstrated little over-all change in their performance. These students achieved a mean rating of 4.33 at the beginning of the course and a mean rating of 4.31 at the end, the difference between these two means not being significant. Of the total of 54 students who repeated the procedure, 23 showed improvement, 7 received the same rating, and 24 received a worse rating the second time. However, it is important to note that those students who improved

received a definitely higher rating than the ones who did not improve on the final running of the experiment. The ratings for the improved group had a mean of 5.35 as opposed to a mean of 3.55 for the unimproved group, a difference significant at the .01 level.

A comparison of the ratings of the freshmen and the ratings of the seniors demonstrated that the seniors received a somewhat lower mean score (3.80) even though the difference between the ratings of the seniors and the freshmen were not significantly different. Certain qualitative differences between the senior and freshmen interpretations of the material are worthy of mention. The seniors did much better in picking out the pathology involved in the case. Most of them were able to detect the paranoid features involved. However, the seniors tended to ignore almost completely the personality dynamics, whereas the freshmen described them more fully.

An examination of a scattergram of the data concerning the relationship between the initial ratings and the scores on the final examination indicated that this was a curvilinear type of relationship. Eta was chosen to test the significance of this relationship. A value of .34 was obtained for Eta-squared. According to Peters and Van Voorhis,² Eta-squared was converted to Epsilon-squared and corrected for bias and sampling error. The value obtained for Epsilon-squared was .02. This value is in the expected direction, but not statistically significant. It would be considered significant if the total number of cases had been higher (about 300).³

² Peters, C. C., and Van Voorhis, W. R. "Statistical Procedures and Their Mathematical Bases." New York: McGraw-Hill, 1940.

³ In another kind of data analysis, scores on the final examination were converted into scores equivalent to the "Mike" material. Of the 80 students, 32 deviated by 1 point or less on the two tasks.

DISCUSSION

The results of this study have rather interesting implications for the use of projective techniques in this area, as well as for the medical school curriculum and the role of psychiatry in it. The relative lack of improvement on the experimental procedure during the course would seem to indicate that whatever psychiatric aptitude was involved in interpreting the projective material was present at the beginning of the course and was not materially improved as judged by the final ratings. Whether this ability is related to the student's previous training in psychology or whether it reflects a certain personality variable (which might be termed "Psychiatric Sensitivity") cannot definitely be determined on the basis of the present study. The fact that there is a relationship between the initial ratings and the final grades in the expected direction, even though it is not as significant as might be desirable, indicates that the final examination is, to some extent, measuring a similar characteristic in the students. Perhaps, that part of their relationship which lowers the statistical significance is due to the fact that the examination does not altogether measure that which the instructors would like to determine. This is, of course, a limitation inherent in the use of a multiple choice objective type of examination. The fact that those students who tend to improve on the experimental procedure do significantly better on the final ratings than the others indicates that improvement on the experimental procedure may be in some ways a better measure of the students having achieved the ob-

jective of the course as set out at the beginning of this paper than the scores on the final examination.

The idea of using the interpretation of projective materials to gauge the student's sensitivity to the unconscious has not previously been studied to any considerable extent. The present study would seem to indicate that such a procedure holds a certain amount of promise. A follow up study with this particular group of students is contemplated throughout their entire medical school career and further results should demonstrate more clearly the value of this approach.

SUMMARY AND CONCLUSIONS

One of the objectives in an introductory course in psychiatry might be to make the student increasingly sensitive to the influence of unconscious material upon various types of behavior. The use of projective techniques was introduced as a means of measuring this variable. It has been demonstrated that those students who tend to improve in this regard during the course generally end up demonstrating more sensitivity than those who do not. Also, a certain low, but positive, relationship between initial ratings and grades on final examination in the course was demonstrated. The fact that senior students received a somewhat lower rating on the experimental procedure than freshmen raises questions about the emphasis in medical school on diagnosis and pathology as opposed to personality dynamics. Further research along these lines is suggested.

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Rorschach Responses of Normal Aged

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Herman Rorschach (10) in the first reference to Rorschach responses of the aged suggested three signs symptomatic of old age:

1. A coarctation of experience type (Erlebnistypus), i.e., a restriction in the ability of the aged to make fullest use of their capacities and a diminution in emotional reactions.

2. Unclear forms which suggest a decrement in intellectual efficiency and perceptual acuity.

3. Marked response stereotypy demonstrating a constriction in the field of interest and imagination.

Since these initial observations by Rorschach, there have been only three major studies dealing with the Rorschach responses of the "normal" aged. In 1946 Walter Klopfer (7) administered the Rorschach to 50 subjects 60 years of age and over. Thirty subjects resided in a home for the aged, and 20 subjects were noninstitutionalized. Klopfer obtained results which suggested a personality pattern of the normal aged characterized by:

1. intellectual impairment
2. loosening of intellectual ties to reality
3. inability to make full use of inner resources
4. inconsistency in responding to emotional challenges
5. difficulty in forming relationships with others (p. 152).

He based these conclusions on the following characteristics of the protocols:

1. Low Sum C
2. FM greater than M
3. Little m, k, K and FK
4. Color responses more likely to be CF

5. Small number of responses

6. Small number of 'popular' responses

7. Overemphasis on W; underemphasis on D

8. High A% (p. 149).

The second major study was undertaken by Prados and Fried (9) in 1947. Their sample consisted of 35 subjects in the age range of 50 to 80. They concluded that

... with increasing age an impoverishment of creative intellectual faculties takes place. The subjects between 50 to 70 react with anxiety to the awareness of intellectual inadequacy. The subjects over 70 seem resigned to their condition.

The records show that the capacity for emotional responsiveness to the environment is impaired by age and that the affective life becomes relatively shallow. Little inner conflict takes place. With increasing age the individual's control over his instinctual demands tends to disappear and some of the primitive manifestations of childhood reoccur (p. 120).

The quantitative results of this study were essentially in agreement with Klopfer.

A few months prior to the writing of this paper, Ames, Learned, Metreaux, and Walker published the third major work in their text *Rorschach Responses in Old Age* (1). They analyzed the responses of 200 men and women between the ages of 70 and 100. Their subjects were classified into three groups—normal, pre-senile, and senile, with classification being made directly from the Rorschach itself.

Quantitative results suggested that the Rorschachs of normal elderly persons were not appreciably different from the Rorschachs of younger normal adults. The Rorschach characteristics reported by Klopfer and Prados and Fried were only present in the groups Ames classified as presenile and senile.

Ideally, the results of such studies should contribute to a consistent body of normative data from which the Rorschachs of normal aged could be assessed. The previous investigations, however, manifest shortcomings which prevent fulfillment of this goal. Intelligence, a recognized variable in Rorschach patterning, was infrequently considered. All the investigators except Prados and Fried included institutionalized subjects in their sample. Frequency distributions were also not presented in such a manner as to be helpful in establishing normative criteria for the actual Rorschach responses. Finally, Ames, et. al., have emphasized developmental trends rather than normative trends.

It is thus the aim of this study to present, in a normative fashion, the Rorschach responses of a group of normal aged individuals. These responses will then be compared with the responses of the hypothetical normal, normals of younger age groups, and other aged normals. The typical personality characteristics of the aged taken from this sample will be described through a composite Rorschach protocol.

SUBJECTS

The subjects for this study were 50 noninstitutionalized persons, 25 men and 25 women, between the ages of 65 and 85. Almost all the cases were residents of Morgantown, West Virginia, and all lived at home and were capable of caring for themselves, their households, and their everyday activities. Five of the samples were gainfully employed, and the remaining subjects were retired.

Initially the subjects were obtained individually by the junior author; and these first cases were requested to solicit the cooperation of friends, relatives, and acquaintances. More than half the sample was obtainable in this manner. The remaining portion consisted of aged persons who were obtained from the rolls of various organizations, local social agencies, and West Virginia University. Marital status and the present or previous occupational level of the group are shown in Table I. Table II gives the means, sigmas, and percentile distributions of the Intelligence Quotients and Deterioration ratios.

TABLE I. Occupational and Marital status

	(Percentage in each group.)		Total
Marital	Men	Women	
Married.....	56	36	46
Single.....	4	4	4
Widowed.....	40	60	50
Occupational			
Professional.....	16	4	10
Semi-Professional.....	24	32	28
Clerical (Skilled).....	28	8	18
Semi-Skilled.....	24	0	12
Unskilled.....	8	4	6
Housewife.....	....	52	26

It will be observed that both the mean and median intelligence scores are within the average range as defined by Wechsler (11). Through the use of Wechsler's standard of significant Deterioration Ratios it would appear that this aged group is not unduly affected by mental deterioration.

PROCEDURE

The Rorschach and the Wechsler-Bellevue Intelligence Scale were administered to all subjects in their own home, and every effort was made to standardize the procedure. An attempt was made to establish rapport with each subject, and this was followed by a brief explanation of the tests and testing procedure. The subjects had been previously contacted by phone, and the purpose of the study had been

TABLE II. Means, Sigmas and Percentile Rank Distribution for Wechsler Intelligence Quotients and Wechsler Deterioration Ratios

Percentile Rank	Total Sample		Women		Men	
	I.Q.	D.R.	I.Q.	D.R.	I.Q.	D.R.
100.....	147	34.0	135	31.0	147	34.0
95.....	136.5	30.0	127	28.0	140.5	29.0
90.....	128	22.0	126	21.5	132.5	19.0
85.....	127	17.0	124	19.0	128	14.5
80.....	127	14.0	119	16.0	127	11.0
75.....	123.5	11.0	119	13.0	127	9.0
70.....	119	8.0	116.5	7.0	125	8.0
65.....	116.5	6.0	113	0.0	121.5	7.0
60.....	113	3.0	113	0.0	113	5.0
55.....	110.5	1.0	111	0.0	109	3.0
50.....	109	0.0	109	0.0	109	1.5
45.....	108.5	0.0	109	0.0	108	1.0
40.....	108	0.0	108	0.0	107	0.0
35.....	107	0.0	105	0.0	107	0.0
30.....	105	0.0	101.5	0.0	106	0.0
25.....	102.5	0.0	101	0.0	105	0.0
20.....	101	0.0	100	0.0	103	0.0
15.....	99	0.0	99	0.0	99	0.0
10.....	97	0.0	97	0.0	97	0.0
5.....	91	0.0	87	0.0	88	0.0
Mean.....	112.78	6.74	110.84	6.56	114.72	6.92
Sigma.....	13.47	9.84	11.50	10.06	14.94	9.67

made clear to them.

The Wechsler was administered first in all cases. After completion of the intelligence test, the Rorschach was almost immediately given, using the introductory directions and explanations set forth by Klopfer and Kelley (5). In those instances where the Wechsler consumed over two hours, Rorschach administration was delayed until a later time.

At the completion of the tests, the Rorschach responses were immediately scored by the examiner. The scoring was later checked and rescored by another trained worker. The system employed was that outlined by Klopfer, Ainsworth, Klopfer, and Holt in *Developments in the Rorschach Technique* (6). Both Main and Additional responses were scored, although only the Main responses were used in the statistical analysis.

Statistical Analysis

In this study means, standard deviations, medians, and percentiles are presented for all the major Rorschach scoring categories.

In evaluating the data from the standpoint of personality structure, a

median Rorschach composite protocol is presented and interpreted.

RESULTS AND DISCUSSION

Quantitative

The quantitative results of this study are presented in Tables III, IV, V, and VI.

A. Determinants

Inspection of Table III reveals the following:

1. Over 65% of the aged group produced only two M with the mean number of M for the whole group being 2.02. The range extended from zero M to 6 M.

2. FM responses outnumber M responses in 70% of the subjects. In 30% of the subjects FM equals M, but taking the group as a whole, both the mean and median FM exceed the mean and median M. The FM responses ranged from zero to 12.

3. The m responses were disregarded by 80% of the group.

4. Diffusion and vista responses, k, K, FK, were rarely used. Ninety per cent of the subjects did not use k, 70% did not use K, and 30% used only 1 K. In 85% of the subjects FK

TABLE III. Means, Sigmas, and Percentile Rank Distributions
for Determinant Scoring Categories

Percentile Rank	M	FM	m	k	K	FK	F	Fc	c	C'	FC	CF	C
100.....	6.0	12.0	1.0	1.0	2.0	1.0	21.0	4.0	2.0	5.0	5.0	4.0	0.0
95.....	5.0	9.0	1.0	1.0	1.0	1.0	15.0	2.5	2.0	2.0	2.0	3.0	0.0
90.....	4.0	7.0	1.0	0.0	1.0	1.0	13.0	2.0	1.0	2.0	2.0	2.0	0.0
85.....	4.0	5.0	0.5	0.0	1.0	1.0	10.5	2.0	1.0	1.0	1.5	2.0	0.0
80.....	3.0	5.0	0.0	0.0	1.0	0.0	7.0	2.0	1.0	1.0	1.0	2.0	0.0
75.....	3.0	4.0	0.0	0.0	1.0	0.0	7.0	1.5	1.0	1.0	1.0	1.5	0.0
70.....	3.0	4.0	0.0	0.0	1.0	0.0	7.0	1.0	0.0	1.0	1.0	1.0	0.0
65.....	2.0	4.0	0.0	0.0	0.0	0.0	6.5	1.0	0.0	0.5	1.0	1.0	0.0
60.....	2.0	3.0	0.0	0.0	0.0	0.0	6.0	1.0	0.0	0.0	1.0	1.0	0.0
55.....	2.0	3.0	0.0	0.0	0.0	0.0	5.0	1.0	0.0	0.0	1.0	1.0	0.0
50.....	2.0	3.0	0.0	0.0	0.0	0.0	5.0	1.0	0.0	0.0	0.0	1.0	0.0
45.....	1.5	2.0	0.0	0.0	0.0	0.0	5.0	1.0	0.0	0.0	0.0	1.0	0.0
40.....	1.0	2.0	0.0	0.0	0.0	0.0	5.0	1.0	0.0	0.0	0.0	1.0	0.0
35.....	1.0	2.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
30.....	1.0	1.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0
25.....	1.0	1.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
20.....	1.0	1.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0
15.....	0.5	1.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
10.....	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
5.....	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Mean.....	2.02	3.24	.16	.10	.36	.18	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Sigma.....	1.50	2.55	.37	.30	.55	.38	6.26	.96	.36	.58	.74	.94	0.0
							4.29	.96	.63	.98	.98	1.01	0.0

TABLE IV. Means, Sigmas and Percentile Rank Distributions
for the Location Scoring Categories

Percentile Rank	W	W%	D	D%	d	d%	Dd	S	Dd and S%
100.....	15.0	100.0	23.0	87.0	9.0	30.0	4.0	3.0	20.0
95.....	11.0	90.0	17.0	67.0	4.0	18.0	3.0	1.0	16.0
90.....	10.0	85.0	15.0	60.0	2.0	14.0	2.0	0.0	10.0
85.....	9.0	77.5	14.0	57.5	2.0	11.0	1.0	0.0	8.5
80.....	8.0	70.0	12.0	53.0	1.0	9.0	1.0	0.0	8.0
75.....	8.0	68.0	9.0	52.5	1.0	6.0	1.0	0.0	7.5
70.....	8.0	64.0	9.0	50.0	1.0	4.0	1.0	0.0	6.0
65.....	8.0	56.5	8.0	50.0	0.0	0.0	1.0	0.0	3.0
60.....	7.0	50.0	7.0	50.0	0.0	0.0	0.0	0.0	0.0
55.....	7.0	50.0	7.0	49.5	0.0	0.0	0.0	0.0	0.0
50.....	7.0	47.0	7.0	46.0	0.0	0.0	0.0	0.0	0.0
45.....	7.0	45.5	6.0	43.5	0.0	0.0	0.0	0.0	0.0
40.....	7.0	44.0	5.0	42.0	0.0	0.0	0.0	0.0	0.0
35.....	6.0	41.0	4.0	36.0	0.0	0.0	0.0	0.0	0.0
30.....	6.0	37.0	4.0	30.5	0.0	0.0	0.0	0.0	0.0
25.....	5.0	34.0	2.5	26.5	0.0	0.0	0.0	0.0	0.0
20.....	5.0	27.0	2.0	20.0	0.0	0.0	0.0	0.0	0.0
15.....	4.5	22.5	1.5	14.0	0.0	0.0	0.0	0.0	0.0
10.....	4.0	19.0	1.0	10.0	0.0	0.0	0.0	0.0	0.0
5.....	2.0	7.5	.5	4.0	0.0	0.0	0.0	0.0	0.0
Mean.....	6.98	50.2	7.26	40.94	.90	4.14	.62	.14	3.58
Sigma.....	2.69	7.65	5.51	19.43	1.95	7.46	1.06	.32	5.45

was not used at all.

5. Fifty per cent of the group produced at least 5 F with the mean F being 6.26.

6. Of the texture and achromatic determinants, Fc was used more frequently than either c or C'. Seventy per cent of the subjects used at least 1 Fc, whereas 75% used no c and 65% no C'.

7. CF responses were used more frequently than FC. C was not used at all. Generally speaking, color is used infrequently.

B. Location

Table IV reveals that 35% of the

TABLE V. Means, Sigmas and Percentile Rank Distributions
for Major Content Categories

Percentile Rank	H	Hd	A	Ad	Aobj.	At.	N	Obj.	Pl	Geo	Arch	Cl	Art and Design	A%
100.....	7.0	7.0	22.0	8.0	3.0	5.0	3.0	8.0	5.0	6.0	1.0	2.0	2.0	84.0
95.....	5.5	2.0	16.0	3.5	2.5	3.0	3.0	3.5	3.0	2.0	.5	1.5	.5	80.0
90.....	4.0	2.0	12.0	3.0	2.0	2.0	2.0	3.0	2.0	1.0	0.0	1.0	0.0	70.0
85.....	3.0	1.0	9.0	2.5	2.0	1.5	1.5	2.5	2.0	1.0	0.0	1.0	0.0	64.0
80.....	3.0	1.0	9.0	2.0	1.0	1.0	1.0	2.0	1.0	1.0	0.0	1.0	0.0	61.0
75.....	3.0	1.0	8.0	1.0	1.0	1.0	1.0	2.0	1.0	1.0	0.0	1.0	0.0	58.5
70.....	2.0	1.0	7.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0	0.0	55.0
65.....	2.0	0.0	7.0	0.5	1.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	51.5
60.....	2.0	0.0	6.0	0.0	1.0	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	50.0
55.....	2.0	0.0	6.0	0.0	1.0	1.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	50.0
50.....	2.0	0.0	6.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	45.0
45.....	2.0	0.0	5.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.5
40.....	2.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0
35.....	1.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0
30.....	1.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	38.0
25.....	1.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.5
20.....	1.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.0
15.....	0.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.5
10.....	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0
5.....	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.5
Mean.....	2.12	.60	6.78	.88	.80	.78	.68	1.12	.76	.50	.06	.38	.08	47.82
Sigma.....	1.66	1.29	4.16	1.56	.87	1.10	.97	1.53	1.24	1.02	.24	.60	.39	16.36

subjects produced more than half of their responses in the W category. In 30% of the cases D was used 50% of the time or more, with the mean D% being 40.94. Small and unusual details were seldom used. Seventy per cent utilized no d and 90% employed less than 10% Dd and S.

C. Content

Table V demonstrates that animals are used more frequently than any other concept. The median number of animal responses is 6, and the mean 6.78. Thirty five per cent of the cases had more than half of their responses in the animal category. The mean animal percentage for the group was 47.82.

The number of other content categories employed is negligible. The median number of human responses is 2, but the medians for Hd, Ad, At, N, Pl, Geo, Arch, Cl, Art and Design, are all zero.

D. Certain percentages and interpretive ratios

From Table VI it will be observed that the median number of responses

to the cards is 13, with the range extending from 7 responses to 36. Half of the group gave 40% of their responses in the F category and 45% in the Fc+F+FK group. The median number of Popular responses used was 4, and the mean 4.64.

Sum C appears to be quite low. A median score of one was obtained for this ratio. The median percentage of responses to the last three cards was 33 and the mean 32.30.

COMPARISON OF THE AGED GROUP WITH YOUNGER NORMAL ADULTS AND WITH THE HYPOTHETICAL NORMAL

Table VII shows the median Rorschach scores of our aged group compared to the hypothetical normal and to the normative groups of Brockway, Gleser, and Ulett (3) and Cass and McReynolds (4). Brockway, Gleser, and Ulett's subjects were 151 men between the ages of 17 and 36 who had been psychiatrically screened for adjustment. Cass and McReynolds' group consisted of 104 "normal" men with a median age of 34. Beck and Rabin's study (2) did not lend itself

TABLE VI. Means, Sigmas and Percentile Rank Distributions for Certain Percentages and Interpretive Ratios

Percentile Rank	R	T.T. (in sec.)	Ave. R.T. Art-ac	Ave. R.T. Art-c	F%	Fc+F+Fc%	P	Sum C	NR Last 3 Cds %
100	36.0	1710	43	45	87	87	10.0	6.5	52
95	31.5	1432	41	30	70.5	75.5	8.0	3.0	48.5
90	29.0	1195	27	28	62	70	7.0	3.0	46
85	23.0	1130	22.5	27	56	59	6.0	2.5	42.5
80	21.0	875	21	25	50	58	6.0	2.0	41
75	18.0	710	20	23	49	55.5	6.0	2.0	39.5
70	17.0	620	18	21	44	53	6.0	2.0	38
65	16.5	575	15.5	19	43.5	51	5.5	1.5	36.5
60	16.0	495	15	19	42	50	5.0	1.5	35
55	14.5	455	14	18	40	49	5.0	1.5	33
50	13.0	435	13	16	40	45	4.0	1.0	33
45	12.0	430	12.5	14.5	36.5	44	4.0	1.0	30
40	12.0	400	12	14	35	42	4.0	1.0	30
35	12.0	390	11	13.5	31.5	41	4.0	0.5	30
30	11.0	372	11	13	25	40	4.0	0.5	29
25	10.0	350	10	12	25	36.5	3.5	0.5	25.5
20	10.0	315	10	11	21	33	3.0	0.0	23
15	10.0	257	9	10	20	30	2.5	0.0	20
10	8.0	220	7	10	17	27	2.0	0.0	14
5	7.5	150	5	7	10	19	0.5	0.0	12
Mean	15.92	601.14	16.18	18.10	39.12	46.84	4.64	1.37	32.30
Sigma	7.34	401.03	9.39	8.17	18.41	17.26	2.04	1.26	10.39

TABLE VII. Median Rorschach Scores of the Normal Aged Compared to the Scores of a Sampling of Normal Young Men and the Hypothetical Normal

Rorschach Category	Brockway, Gleser, and Ulett	Cass and McReynolds	Hypothetical Normal	Present Aged Sample
<i>Determinants</i>				
M.....	2.0	2.0	3	2.0
FM.....	3.7	3.5	2	3.0
m.....	1.2	0.5	<1	0.0
k.....	0.2	0.0	<1	0.0
K.....	0.1	0.0	0	0.0
FK.....	0.2	0.0	1	0.0
F.....	11.1	7.5	<1/2 T.R.	5.0
F%.....	*	34.0	30-50	40.0
Fc.....	1.4	2.0	2	1.0
c.....	0.7	0.0	0	0.0
C'.....	0.9	1.0	<1	0.0
FC.....	0.9	1.5	2	0.0
CF.....	2.4	2.0	1-2	1.0
C.....	0.0	0.0	0	0.0
<i>Location</i>				
W.....	8.4	9.0	*	7.0
W%.....	33.2	45.0	20-30	47.0
D.....	12.1	9.5	*	7.0
D%.....	48.4	44.0	45-55	46.0
d.....	*	0.0	*	0.0
d%.....	*	0.0	5-15	0.0
Dd.....	2.9	1.0	*	0.0
S.....	2.9	0.5	*	0.0
Dd+S%.....	*	0.7	<10	0.0
<i>Content</i>				
H.....	2.6	2.5	*	2.0
Hd.....	1.1	0.5	*	0.0
A.....	9.4	9.0	*	6.0
Ad.....	1.9	1.0	*	0.0
A%.....	*	*	35-50	45.0
<i>Interpretive Ratios</i>				
R.....	26.2	22.5	20-40	13.0
P.....	5.6	5.5	4-5	4.0
Sum C.....	2.8	3.0	>2	1.0
FK+F+Fc%.....	*	45.0	50	45.0
NR Last 3 CDS %.....	*	39.0	33	33.0

* Data not available on these categories.

** Based on Klopfer and Kelley, "The Rorschach Technique," and clinically derived standards.

to comparison nor did the work of Neff and Lidz (8).

The comparative data yielded the following results:

A. Determinants

1. The aged group produced the same number of M responses as younger normals, but the number of M was below the hypothetical normal.
2. FM exceeds M in our group as does this ratio in normal samples. This finding is not consistent with the hypothetical normal.
3. The present aged group were not

found to differ appreciably from other groups in the production of m, k, K, and FK.

4. The number of F responses in the aged is below the younger adult samples, but the F% seems to be within hypothetical limits.

5. The aged employ less Fc than any of the comparative groups. Only small differences were noted in the c and C' category, however.

6. The number of FC and CF responses of our aged sample are below all groups. There were no differences

in the number of C responses.

B. Location and Content

1. The W% of the aged exceeds all the other groups.

2. The number of D responses employed by the aged are less than the younger normals but the D% does not seem to deviate significantly from any of the groups. The d%, however, is smaller than the hypothetical normal.

3. H, Hd, A, Ad, responses of the aged are less in number than all the other groups, but the A% is within the hypothetical normal range.

C. Percentages and Interpretive Ratios

1. The median number of responses in the aged is considerably below all groups.

2. Popular responses are within the hypothetical normal range but below the other groups.

3. Sum C is lower than all groups.

4. The $FK+F+Fc\%$ in our sample does not differ significantly from any of the other groups.

COMPARISON WITH OTHER AGED GROUPS

Table VIII reveals how the Rorschach responses of our aged group compare to the responses of other aged persons. Means were employed in the comparison because the results of other studies had taken this form.

TABLE VIII. Comparative Findings of Different Investigators
Mean Scores

	Klopfer	Prados	and	Fried	Ames et. al. (normal group)	Present Study
Age (mean or range)	73.5	50-60	61-70	71-80	70-100	65-85
Number of subjects	50	13	12	10	41	50
R	14.1	20	23	20	25.9	15.92
M	1.4	2.6	1.9	1.8	3.3	2.02
FM	3.2	4.8	5.0	5.1	2.7	3.24
m	.1	....	....	....	.7	.16
FC	.3	1.8	1.7	.2	1.0	.74
CF	.7	1.5	1.6	.2	1.3	.94
C	....	.2	.2	.3	.2	0.0
W%	....	61%	52%	43%	36%	50.2
D%	high	37%	46%	55%	47%	40.94
Dd%	low	2%	2%	2%	15%	0.0
F%	....	43%	45%	49%	50%	39.0
A%	high	....	....	....	46%	48.0

Rorschach Responses of Normal Aged

A general overview of Table VIII shows that the responses of the present group are very similar to Klopfer's. Considering the scoring categories more closely, however, one will note that Prados and Fried's and Ames' groups gave more responses. The greater proportion of FM to M is present in all the groups except Ames', where the M seems to be rather high. Color responses are also used more by Prados and Fried's and Ames' subjects than either Klopfer's group or our group. As far as W% and D% are concerned, our subjects seem to come closest to Prados and Fried's subjects in the 61-70 age range. The Dd%, however, is much below the percentages found by the other workers. Our A% is lower than the Ames' group, but the A% corresponds very closely with the other aged groups.

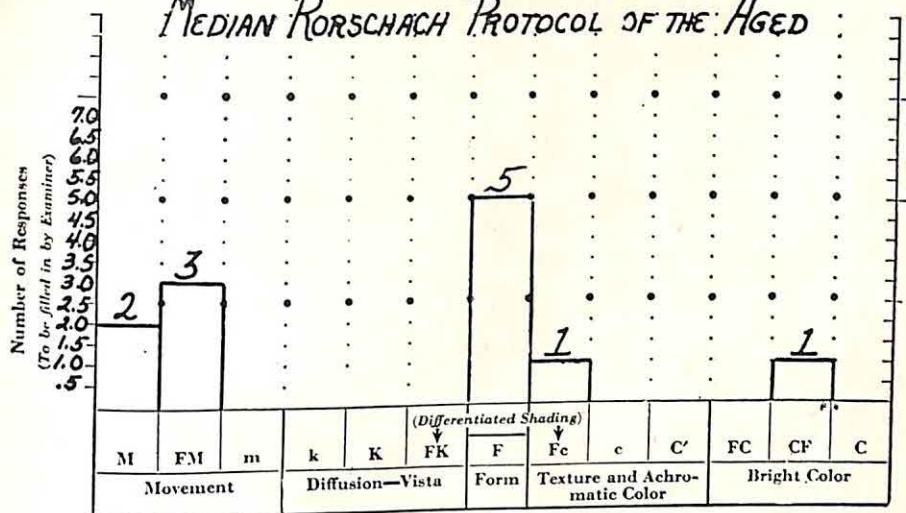
QUALITATIVE CHARACTERISTICS

A median Rorschach protocol, which represents a composite of the typical aged individual of the present group, is shown in Figure 1.

A. Outer Control

The protocol seems to suggest that the typical aged person has some difficulty in his adjustment to others. He is not particularly responsive to stimuli coming from the environment, and there is evidence of a narrowing of social and emotional contacts with

MEDIAN RORSCHACH PROTOCOL OF THE AGED



RELATIONSHIPS AMONG FACTORS

Total Responses (R) = 13
 Total Time (T) = 435"
 Average time per response ($\frac{T}{R}$) = 34"
 Average reaction time for Cards I, IV, V, VI, VII = 13"
 Average reaction time for Cards II, III, VIII, IX, X = 16"

$\frac{\text{Total F}}{R} = 40\%$
 $\frac{F + Fc + FC}{R} = 45\%$

$\frac{A + Ad}{R} = 45\%$

Number of P = 4

Number of O =

(H + Ad) : (Hd + Ad) = 8 : 0

$\frac{\text{sum C}}{2} = \frac{FC + 2CF + 3C}{2} = 1$

M : sum C = 2 : 1

(FM + m) : (Fc + c + C') = 3 : 1

No. of responses to Cards VIII, IX, X = 33%

W : M = 7 : 2

Succession:

Rigid Orderly Loose Confused

(Place a check mark at the appropriate point on the scale above)

Estimate of Intellectual Level

Intellectual Capacity	Intellectual Efficiency
... Very Superior	... Very Superior
... Superior	... Superior
... High Average	... High Average
... Low Average	... Low Average
... Dull Normal	... Dull Normal
... Feeble-minded	... Feeble-minded

Note that this estimate is based mainly on the following:
 number and quality of W
 number and quality of M
 level of form accuracy
 number and quality of O
 variety of content
 succession

Manner of Approach

W (47%) D (46%) d (0%) Dd and S (0%)

Enter the location percentages in the spaces above. Compare these percentages with the norms shown in the box below, by placing a check mark opposite the appropriate range of percentages.

W	D	d	Dd and S
< 10% ((W))	< 30% ((D))	< 5% (d)	
10-20 (W)	30-45 (D)	5-15 d	< 10% Dd S
20-30 W	45-55 D	15-25 d	10-15 Dd S
30-45 W	55-65 D	25-35 d	15-20 Dd S
45-60 W	65-80 D	35-45 d	20-25 Dd S
> 60 W	> 80 D	> 45 d	> 25 Dd S

FIGURE 1. Composite Psychogram of the Aged Subjects.

others. Part of this reaction may stem from insecurities which manifest themselves in social situations.

B. Inner Control

The aged seem to show a lack of ability to empathize. Not only were

M responses hard to elicit, but M often represents mythological or fantasy figures rather than objects of reality. This finding considered with the color nuances seems to suggest that the aged person has withdrawn

from social relationships and that he often tends to live in a somewhat isolated fantasy world. A regressive reaction is suggested.

Generally speaking, although there were no gross breakdowns in control functions, nine of the subjects did produce a total of 13 F— responses. It may be thus hypothesized that not all aged persons show the same degree of impairment in intellectual functioning nor the same decrement in their effectiveness to deal with the problems of everyday life.

C. Adjustment and Maturity

There were many behavioral signs suggesting the presence of anxiety, but anxiety did not become manifest in the form of m, k, or K responses. The aged frequently made such remarks as "Do others see that," and "Do you think I'm crazy?" Their responses were, in addition, often very evasive, stereotyped, and constricted, containing many leaf, tree, butterfly, and bat concepts. Anxiety was also revealed in frequent rejections of the cards.

D. Erlebnistyp

The Rorschach ratios suggest that aged persons are typically introversive personalities.

E. Emotional Aspects of Personality

The composite protocol represents the aged person as being one who is showing signs of emotional immaturity and one who is finding his adjustments to his environment increasingly difficult. The lack of adaptability produces anxiety, which in turn promotes withdrawal from close human relationships. Elderly persons do not seem to possess acute awareness or insight into themselves nor is there evidence that efforts are being made to change their mode of adjustment to others. The aged person is sensitive to others, but he is inclined to withdraw to the security of his own inner life.

F. Intellectual Aspects.

The overemphasis on the W sug-

Rorschach Responses of Normal Aged

gests that aged take an inflexible, rigid, and global approach to unfamiliar situations. The presence of DW's in the records suggests some loss in intellectual efficiency, and this hypothesis is further borne out by the fact that the W's are often superficial and of poor quality.

SUMMARY AND CONCLUSIONS

The purpose of this study was threefold:

1. To present in a normative fashion the Rorschach responses of a group of normal aged persons.
2. To compare these responses with the responses of younger "normal" groups and with other aged groups.
3. To evaluate the personality pattern of the aged.

To this end, Rorschachs were individually administered to 50 noninstitutionalized persons, 25 men and 25 women, between the ages of 65 and 85. Means, medians, standard deviations, and percentiles were calculated for all the major scoring categories.

A. Normative

Medians of the major scoring categories suggested the following standards for this group.

1. An excess of FM over M.
2. Zero m, k, K, FK, c, C'.
3. F of 5 and an F% of 40. Form accuracy ranging from fair to good with limited F—.
4. An Fc of 1.
5. More CF than FC and zero C.
6. W of 7 and W% of 47. The largest proportion of W's were organized populars.
7. D of 7 and D% of 46.
8. Zero d, d%, Dd, S, and Dd+S%.
9. H of 2 and A of 6. A% of 45; Aobj and Obj of 1. The remaining content categories zero.
10. An R of 13.
11. A reaction time of 13 seconds for achromatic cards and 16 seconds for chromatic cards.
12. A P of 4 and NR to last 3 cards percentage of 33.

B. *Comparative*

The following results suggested characteristics of the aged group which deviated consistently from both the hypothetical normal and from the normative studies of younger men.

1. Low Sum C
2. Infrequent use of shading
3. Underproduction of FC and CF
4. Narrow content
5. Reduction in the total number of responses
6. Overemphasis of W
7. Underemphasis of d
8. Low number of popular responses.
9. High A%

It was found that these results were fairly consistent with the findings of Rorschach studies of the aged.

C. *Qualitative*

An evaluation of a composite Rorschach record of this aged group seemed to warrant the following hypotheses.

1. The aged are characteristically suspicious, anxious, and evasive in their approach to the Rorschach.
2. Aged individuals seem to show a somewhat immature, introverted inner life which is colored by fantasy and unreality.
3. The aged show difficulties in interpersonal relationships.
4. Little awareness of affectional

needs is shown by elderly persons.

5. Aged persons show signs of inflexibility, stereotypy, and intellectual impotence.

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A Study of Dyadic Relationships in the French Family^{1,2}

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This paper deals with the study of the dyadic relationships of the French family as revealed by the analysis of the Thematic Apperception Test protocols of twenty-six adolescents (thirteen boys and thirteen girls) studied in the town of Revel, France. Revel was selected for the study because it was considered to be a fairly typical small homogeneous French community. It has an area of 3,551 hectares and a population of 3,508 persons. The physical devastation of World Wars I and II by-passed Revel and the surrounding region. The town has both an agricultural and semi-industrial economic base. There are numerous farms, a few small furniture and liqueur factories, and many artisan furniture workshops. There are no ethnic groups and almost all of the people are of Catholic background.

The children in the study participated on a voluntary basis. They were enlisted through personal contacts and through their parents, teachers, and the municipal officials in the community. No child who was asked refused to participate.

The twenty-six children in the study ranged in age from eleven to seventeen years with a mean age of 13.2 and a standard deviation of 1.5 years. All the children have a Catholic background, and all attended public

school although there is a small parochial school in the town. Almost all were in grades commensurate with their age levels. One, a fifteen-year-old, had just left school. The social class level of the sample population can be assayed in part from the occupations of the children's fathers. Ten are craft workers, three are general laborers, two are tenant farmers, two proprietor farmers, one an army officer, and the occupations of five are unknown. About half of the mothers work in either the small furniture workshops, liqueur factories, or on the farm. The others are housewives and remain at home.

The small size of the town, the very similar housing conditions, and the narrow economic base seem to preclude any sharp class distinctions. Interviews with over forty adults in the town confirm the impression of a working and peasant population.

Four major dyadic relationships, the father-son, father-daughter, mother-son, and mother-daughter, were analyzed in terms of a series of hypotheses developed by Rhoda Metraux, Margaret Mead and associates (3) in a Research in Contemporary Cultures Project on France. The Metraux-Mead hypotheses were derived primarily from informants, French literature, and films, and it was felt that a clinical study of children living within a French cultural milieu would be a valuable experimental means of testing and adding to these hypotheses.

The Thematic Apperception Test was chosen as the most appropriate instrument for testing the hypotheses. It has been used previously in cross-cultural studies by Henry (1) and Meadow (2). The TAT lends itself particularly well to a study of family

¹ This article is based on a paper submitted to the Committee on Human Development of the University of Chicago in partial fulfillment of the requirements for the Degree of Master of Arts. I wish to thank Dr. William E. Henry, Chairman of the Committee on Human Development for his very helpful suggestions and valuable criticisms. I also wish to thank Dr. William Lloyd Warner for his encouragement and valuable help in initiating this study.

² A summary of this paper was read before the American Psychological Association in New York City on September 4, 1954.

relationships since many of the cards have stimulus pictures of child and parent figures in interaction. Fifteen of the original Murray cards were selected and presented to each child. Cards 1 through 10 and 12, 13, 16, 17, and 18 were used. The boys were given the male series and the girls the female series. Standard instructions were given in French, with the one exception that the children were asked to write their stories. The original protocols were then translated by both an interpreter and the author and analyzed by the author.

The nature of the dyadic family relationships was deduced from the TAT by an examination of the following:

1. The themes that were presented which involved children and adults in interaction.
2. The characteristics and attitudes implied to male and female figures.
3. The events and emotionally-toned interpersonal situations present in pictures generally thought to arouse reflection of parental associations.
4. The kind of symbolism used in connection with parent-child relationships.
5. The presence of emotionally-toned words and situations reflecting unresolved parent-child situations. Examples of this are interactions in which submission to or excessive rebellion against adult figures were present.

The study differentiates and compares the son's and daughter's conceptions of the parental roles in terms of major variables found in the TAT analysis. These variables are: parental dominance and discipline; affection, warmth and understanding; sexuality and aggression. It should be emphasized that the analysis of the family dyadic relationships is based solely on material presented in the stories of the children.

HYPOTHESES

The Metraux-Mead hypotheses to be tested were formulated in terms of the parents' role in relation to the children and the converse—the children's role in relation to the parents.

For the purpose of this paper, the Metraux-Mead hypotheses are abridged.

Father-Son Relationship—The father's main duty is to supervise and assist in the education and development of his son, teaching and guiding him in those skills which will contribute to his future happiness. This facilitation includes a permissiveness toward his adolescent son's sexuality... A young brother or close friend of the father may at times take over some of the more indulgent aspects of the father's role... In fantasy father and son may appear as rivals for a young woman figure, sometimes a *jeune fille*, sometimes a young, beautiful, sexually mature woman...

Son-Father Relationship—French children are taught early of the existence of a sinister male mythological figure somewhere outside the *foyer* to which is attributed excessive violence, destructive sexuality, and other aggressive characteristics... The fantasy figure is consequently available as a recipient of all the negative feelings and fears which the child might otherwise direct onto the image of the father—particularly in his nighttime role. In most cases it would appear that this psychological safety valve works effectively and the son conceives the father to be scoring protective and undestructive... The son is generally conscious of the father's superiority in all spheres and rebellion against his decisions and control is seen as dangerous and well-nigh impossible of success.

Father-Daughter Relationship—The daughter potentially presents the greatest gratification and the greatest temptation to the father. From adolescence or even earlier the feminine sexual qualities of the daughter—provided she is pretty, *caline* (coaxing, caressing), *chic*—are a source of gratification to the father and he will act towards her in a playfully courting manner. There is always a danger that his heavily sexualized relationship will pass over into actual incest; and under unfavorable housing conditions and similar situations such incest would seem to occur with consideration frequency. Under normal conditions the relationship does not pass beyond the *limites de bienséance* (limits of propriety). This relationship is expected to fall into abeyance at the daughter's marriage, when she comes under the influence of her husband.

Daughter-Father Relationship—The displacing of the destructive masculine qualities onto a fantasy figure outside the *foyer* seems to operate for the daughters as well as for the sons; and as a consequence the father is

seen by the daughter as a protective, unfrightening, sexually attractive figure. Under normal circumstances the daughter will seek as a husband a man embodying at least some of the father's qualities; disparity of age is not considered to provide an unfavorable prognosis of marriage... The daughter learns early that the father can be cajoled by appropriate behavior into kindnesses and concessions which would not be spontaneously forthcoming. In the event of the mother's decease or absence, the adolescent daughter can usually fill the mother's roles other than the sexual one, as far as the father is concerned.

Mother-Son Relationship—The mother is justified by her son's successes in all fields, including the sexual; and she prepares him to achieve this success by the most scrupulous attention to his education and training, and by resisting the temptation to spoil him by over-indulgence. The imposing of discipline is the mother's task; and an undisciplined child is a reproach to the mother. The mother's tenderness towards her adolescent son may not be exhibited to the same degree as that of the father towards his daughter; but in some social classes the mother may have sexual relations with her son's friends and companions. In most social classes the mother has the deciding voice in her son's marriage, and regards it as a distinct sacrifice when she permits him to marry a woman of his but not of her choice... She may confide in him, when he is adolescent, some of her difficulties with the father and may privately look to the son for advice and solace; but she does expect him to side with her openly against the father, and indeed, she may repudiate his assistance if it comes to the attention of the father. Even when she makes her son aware of the father's weaknesses or failures, she continues to support the father's nominal status. Thus both the husband-wife and father-son relationships are positively supported by the mother in the eyes of the son, and the crossing of the lines of dyadic relationships does not necessarily endanger their existence when the fact of the crossing is not publicly acknowledged.

Son-Mother Relationship—In contrast to the image of the father, there is no common female image onto which negative or hostile feelings may be directed. The mother tends to be viewed with far more expressed ambivalence than the father; as well as the source of the chief gratifications of childhood, she is also the source of the chief restrictions. Figures of external authority (Justice, the Censorship, *Lelanie*, even France herself) are

fairly consistently conceptualized as feminine. Although the direct expression of sexual feelings cannot be shown towards the mother, young Frenchmen are likely to receive their sexual training at the hands of women of their mother's generation, in some cases the mothers of their companions.

Mother-Daughter Relationship—This relationship (and its reciprocal) is typically more highly charged with expressed ambivalence than any of the preceding relationships. The mother is the teacher and disciplinarian for the daughter as well as for the son, and should equip the daughter with all the arts and skills she possesses; but by doing so she equips a rival capable of displacing her. Many French mothers tend to insist on their daughters' inadequacy and immaturity as long as possible; and, because they must rely on the mother for training and on the mother's judgment of their adequacy, many daughters acquiesce fairly willing in the situation... The need to prove to herself (and to the mother) her skill is undoubtedly an important factor in the daughter's turning to the father for favors and appreciation; this may only increase open tension between mother and daughter... The mother arranges the daughter's marriage; in the case of too attractive a rival, this is likely to take place early... Unlike rivalry between father and son, that between mother and daughter seems not to be resolved in fantasy.

Daughter-Mother Relationship—Like the son, the daughter has no fantasy figure on which to place her negative emotions toward the mother. Apparently the major demand made by French daughters to their mothers is not that the mothers should be lenient, but that they should be *justes* (just), not showing favoritism, not acting capriciously, but following a consistent and understandable line in their exercise of authority. Apart from favoritism, the mother's lack of justice is usually demonstrated by her attempts to delay her daughter's adoption of an adult role: dressing her like a child, refusing to allow her to wear make-up, refusing to allow her to go out without supervision, censoring her reading matter, and generally keeping her unselfconfident.

THE FATHER-SON SON-FATHER RELATIONSHIPS

Eleven of the thirteen boys in our study see the father as dominant, controlling, firm—as a disciplinarian, and as head of the household. The father inflicts punishments which are rarely

physical, but which involve more often the deprivation of a privilege. There is no evidence of direct rebellion against the role of the father. An important reason for this is suggested in many stories which stress the strong integration of the family unit. The family is pictured as an important institution that must be preserved at all costs. Family unity is equated with devotion to country. Direct rebellion against the father would serve to disrupt family unity.

It was found that seven of the boys see the father as affectionate, warm and understanding — as teacher and advisor. In one boy's story, the father kisses his son every night, then the son goes to sleep. Father and son are seen as frequent companions taking trips to the country. In other cases the father is seen as teaching the son how to work on the farm. One of the boys tells this story:

John's father likes him a lot. One evening he gives him kindly advice. If John listens and follows it, he will succeed in his endeavors. (7BM)

As mentioned previously, there is no direct aggression or rebellion toward the father in the stories. Most of the aggression occurs in fantasy activity. It is disguised. It is not necessarily a human being who is cast in the role of the aggressor. More often than not external forces are used as the *modus vivendi* for aggression against the father. One can speculate that this device is used by the subjects to disguise further the real source of the aggression — themselves. However, it seems that as the intensity of the aggression diminishes, the identity of the aggressor becomes more clear. In stories where there is only mild aggression, the child himself is usually identified as the aggressor. This type of story is replete with disobedience, spiteful behavior, and running away.

Sometimes the aggression toward the father is displaced and turned against the self. Again, this may be because there is no outlet for direct aggression against the father figure.

Thus a boy of fourteen relates the following:

Newspapers were telling the story of a child who had blown out his brains. He was the son of an alcoholic who instead of working and earning an honest living would go every day to the street corner to an ill-famed cafe. This boy, whose name was Pierre, would receive the brush-off from his parents. He was thin because he didn't eat often. So one day he decided to get it over with. He wrote a long letter in which he explained his reasons for killing himself, and after signing it he took a revolver, pulled the trigger, and fell down on a couch — blood streaming from his mouth. His fingers had let the revolver drop. The parents changed their way of living but lived sadly. (3BM)

In the next story the aggressive wish toward the father is again very close to being a direct form of aggression. The accident around which the story centers is the externalized, hostile, aggressive wish of the child.

Once upon a time there were two gentlemen who went hunting. They had spread out. One of them was behind a big hedge row. The other thought, "There must be the game." Then he shoots. He wounds the other in the belly. They bring him to the hospital. He has to be operated on. He is very sick. His little boy thinks he is going to die. He's thinking of him. He says to himself that he will not go hunting like his father. (8BM)

THE FATHER-DAUGHTER DAUGHTER-FATHER RELATIONSHIP

Six of the thirteen girls see the father as dominant, controlling, firm, a disciplinarian, and as head of the household. In seven cases, there is no evidence concerning the way the girl sees the father in respect to this role. Many of the stories in which the father is seen in this role are similar to the stories of the boys. The differences between the stories of the boys and those of the girls seem to be related in part to the difference of sex roles. The girls' stories deal with the father figure more in terms of marriage and the woman's role in the household. In several cases there is emphasis on the fact that the girl's

duty is to keep a clean house.

An important question arises as to why eleven of thirteen boys see the father in the role of the dominant head of the household as compared with only six of the thirteen girls. The data suggest the explanation that the boys tend to identify more closely with the father and thus the associations of interest such as school and a career are more clearly identified as masculine. The father does not seem to be as active in the control and discipline of the daughter as he is with the son.

Only two of the thirteen girls see the father as affectionate, warm and understanding — as teacher and advisor. In eleven cases there is no evidence relating to this aspect of his role. Quite often the father is seen in a negative light. The story of a fifteen-year-old girl is cited below.

In a poor house are two children — two girls. The younger is the preferred. The oldest is seen as bad by her parents and is always maltreated. It is she who does all the work in the house. In the evening she is very tired. She is always the last to go to bed and the first to rise. What work for a child of eleven years! The mother is never at home. She is always on the move. The father does not work and is always at the bar. He comes home in ill temper and hits the poor innocent child. She has no more strength. She knows that whatever she does, whether it be good or bad, she is always beaten without just reason. Soon the young girl will die and one will hear no more talk of work. (3GF)

As in the case of a boy cited previously, this girl cannot aggress and rebel directly against her parents. So the aggression is displaced and directed toward herself.

A question arises as to why only two of the thirteen girls see the father as affectionate, warm and understanding, as compared with seven of the thirteen boys. Some of the reasons discussed above seem to apply here. That is, the cultural sexual roles seem to make for a much closer father-son than father-daughter relationship. Another important factor enters the situ-

ation. Although only two girls see the father as being affectionate, almost all (nine of the thirteen) see the father as sexually attractive. This leads to the belief that the sexual attraction for the father tends to supersede the type of relationship that is found between the father and son.

This attraction for the father is not expressed directly but is on a more covert level. Typical of many stories is one in which the mother is conveniently disposed of and the girl finds herself living alone with the father. At the same time these girls see a male non-mythological figure as aggressive and threatening, and also are fearful of being attacked by a male figure. Some of the girls are afraid of homicidal attacks by men — of being stabbed with a knife or choked. These homicidal attacks may be disguised sexual attacks.

A twelve-year-old girl tells this story:

One evening I was asleep in my bed. I slept so well that I didn't hear anything. Suddenly I woke up and here comes a very well-dressed man with a knife in his hand. He made a sign for me to say nothing. I didn't say anything. He comes toward me. He shows me the knife and he tells me, "If you shout I will stab you." I tell him that I am afraid. He tells me, "Don't be afraid." I shout. He tells me, "You have shouted," and he kills me. (13MF)

As with the son there is very little direct aggression expressed toward the father figure. In only one case is there a direct attack upon the father. This rather unusual story follows.

On one side of a stair a little girl strangles her father with her hands. She is shaking and weeping. Her father lets her do it without making a motion. Soon he will fall to the ground stiff and dead and the little girl will look at him while weeping. (18GF)

Seven of the thirteen girls aggress against the father in fantasy, having him killed by external sources. Nine of the thirteen express aggression through disobedience and spiteful behavior. This compares with eight of thirteen boys in the first category and

eight of thirteen in the second category. The girls' means of aggression toward the father figure closely parallel the means employed by the boys. A twelve-year-old girl tells the following story:

In an old mill lived a father, mother, brother and sister. One day it was stormy. The mill was destroyed and the father was buried in the wreck. (17GF)

Among other devices used to express aggression against the father are spite, running away, disobedience, and aggression against the self.

THE MOTHER-SON SON-MOTHER RELATIONSHIP

The mother plays an important role in the disciplining and controlling of the son. She seems to be as important in the disciplining of the son as is the father. But on occasion the mother calls on the father to inflict the discipline, especially with the son. There are no cases in which one parent is found contradicting or not supporting the action of the other parent. This again emphasizes the unity of the household and the non-crossing of the lines of the dyadic relationship.

Nine of the thirteen boys see the mother in the role of disciplinarian. In the four other cases there is no evidence on this point. The following story shows the mother as the primary disciplinarian but the father is also involved.

Yesterday evening before supper Bernard, my neighbor, lied to his parents. His parents found out quickly and then—the punishment. They sent him to bed without supper and deprived him of dessert for all of tomorrow. Poor Bernard is now in his bed sleeping. The mother tells him that this will be a lesson to him. (3BM)

Sometimes the mother disciplines the child through her emotional relationship with him. She may exert her influence by withholding love and approbation or becoming sad and hurt. An illustrative story follows.

In this picture we have Andre le Duc and his mother Jean. Andre lowers his

head for he has committed a fault in his youth. Later he comes to ask his parents for their pardon. But they want him to go and ask pardon of the neighbors against whom he committed the fault. He didn't want to be brought down to such a level. Jean, seeing that, turns her back to him and weeps quietly. Then her son, to make her feel better, promises to apologize and they live happily without arguments or worries. (6BM)

Another important cultural standard emerges from this story. Behavior in the family is also dictated by community values. Therefore Andre must apologize to the neighbors.

As in the father relationship, there is no direct defiance or aggression toward the mother. However, there is indirect aggression and spite and disobedience toward the mother. The mode of aggression toward the mother differs to some extent from that employed against the father. Externalized and anthropomorphic mechanisms are less frequently employed. Six of the thirteen boys tell stories in which they attack and murder a woman. Two of these stories follow.

One day a young man and a young girl got married. They loved each other a lot. One day the man is taken crazy and kills his wife. After committing this crime he started weeping and wiped his eyes with the sleeve of his shirt. He took the phone and called the police. After doing that, he took a knife and committed suicide. (13MF)

This man slithers into the room of his lady friend one evening. Noiselessly he approaches as she lies on her bed. At this moment she awakens and cries out not wanting any more of him. Hating her he jumps for her throat. She dies. Recognizing his crime, he turns away, his arms across his eyes. (13MF)

In these stories there is a consistent pattern. Violent aggression is followed by guilt and usually by punishment. The female objects are sufficiently disguised so that it cannot be said with absolute certainty that they represent mother figures.

Six of the thirteen boys see the mother as sexually attractive. In seven cases there is no evidence. The following story seems to be an example

of a boy attempting to display himself before his mother.

My neighbor one day started playing by going up and down a smooth rope all naked. His mother saw him and to punish him she sent him out naked to get some bread. That's how the story of a disobedient child ends. (17BM)

While the mother is seen as sexually attractive by many of the male subjects, she is also seen in a non-sexual role. Seven of the thirteen boys see her as being affectionate and as someone to turn to in times of trouble. (In six cases there is no evidence.) Two of the seven cases are concerned with the independence-dependency strivings of the young adolescent.

In this picture we see a mother who says goodbye to her son who leaves for the colonies to make a fortune. They stay a long time close to each other weeping, holding each other by the waist. The mother hopes the son will come back alive and he thinks he will see her in good health when he returns. These farewells are very touching. This is love that the son brings to his mother and the mother to her son. (10)

In his youth the worthless son left his mother. She loved her son and through all her life she was benumbed. Now he knocks on the maternal door. The mother opens the door but the meeting is so strong that no sign of filial and maternal love is evident. (6BM)

THE MOTHER-DAUGHTER DAUGHTER-MOTHER RELATIONSHIP

In the stories of all thirteen girls, the mother is shown taking a strong part in controlling and disciplining the daughter. This compares with only six of thirteen girls who see the father in this role. The mother is very active in the training of the young girl. All of the girls studied seem to be aware and very much concerned with the role of motherhood. The control which the mother exerts is perhaps best illustrated in the following story:

Once there was a girl who always had someone to disturb her. Once she had a witch behind her. Each time she spoke the witch would hear what she said. When the girl would ask what she had said the witch

would repeat everything. (12F)

Other stories which this girl tells leave little doubt that the witch represents the mother. Another story told by the same subject follows:

Once a woman left her daughter in bed and went on some errands. When she comes back she goes to the girl's room. She opens the door and finds no young girl in bed. The young girl had left the lights on and all her clothes at the bottom of the bed but had taken her Sunday clothes. The mother is furious. She goes out the front door. She finds her daughter with a young man. The mother passes by them and is happy to see her daughter is going to marry him. She goes back to her house and prepares the meal happily. (5)

Although the negative aspects of the mother-daughter relationship seem to be predominant, there are also positive aspects in their relationship which should not be overlooked. Six of the thirteen girls see the mother as being affectionate and someone to turn to in times of difficulty. Some of the stories show a mother and daughter working happily together on a household task. In some stories the mother is showing a positive interest in the child's activities. An example of this follows.

Jeannine has just been playing with a few of her girl friends. It is already late, so they go to their respective homes. Jeannine's mother calls her into the living room. She asks her what she has been doing that afternoon. Jeannine is thoughtful. She tells her mother what she has done. Her mother closes the book that she has been reading. Jeannine takes her little cat into her arms and caresses him while telling her mother what she has done. The mother listens to her dear little girl who is very happy to tell her mother what pleases her little comrades have filled her with. (7GF)

The stories of all thirteen girls indicate feelings of deep rivalry with the mother. A fourteen-year-old girl tells the following story:

After a terrible war between the medieval lords the family was spread all over. People died by the thousands. In each family there were mourning and tears. Here we see a poor family where one of the lords has killed the mother of nine

children. The oldest girl, who is eighteen, replaces the mother. She is dying of worries knowing that her brothers and sisters complain of hunger and are thin and sick. The youngest of the children is about to die. The father and the oldest girl are desolate. They hope they will soon be saved because a bit of bread is distributed and in that way not everyone will die. (13MF)

The next story was told by an eleven-year-old girl.

This beautiful child was only a baby. Now it has grown up. It loves its mother very much. She is bigger than her mother. She will become still bigger, will become a mother, will have children and will be very happy to be loved by them. (18GF)

In this story the child competes with the mother first in saying that she is "bigger" than the mother, and then in her wish to have children. She attempts to deny her competitive feelings by showing how much she loves her mother.

One may question why it is that the rivalry is present in all thirteen cases and is usually so evident. It is felt that this is primarily because all the subjects are adolescents who are very much aware and concerned about the problems of sex and motherhood. Their maternal strivings are heightened during this period, and are on a much more conscious level. While the rivalry is keen and the drive toward independence is strong, there is another strong drive for maternal love, affection and control. Many of the stories illustrate the great ambivalence with which the mother is viewed. The following story is an example of this ambivalence.

This young girl is loved by her grandmother, who spoils her a lot and gives her candy. This young girl is sad, for a little while ago her grandmother died in a terrible accident. Every night she feels like waiting for something. She thinks of hearing the voice of her grandmother who tells her to work well, to be honest in life for in that way she will easily find a good husband and become a good mother. She is gentle, amiable, helpful, and loved by everyone. (12F)

It is assumed that the grandmother

is actually the mother. The significant fact is that the grandmother dies in a terrible accident. The child externalizes the hostile wish that the mother should die.

There is more indirect aggression, spite and disobedience than in any of the other dyadic relationships. Twelve of the thirteen girls depict instances of indirect aggression toward the mother. This compares with seven of the thirteen boys. Eleven of the thirteen girls show instances of spiteful and disobedient behavior toward the mother. This compares with nine of the thirteen boys.

The externalized source of aggression seems to be the method used most frequently for expressing hostility toward the mother.

Despite the rivalry with and aggression toward the mother, there is much ambivalence in the daughter's feelings. This ambivalence is characterized by a drive toward independence as opposed to equally strong needs for maternal love, affection, guidance, and control. There is little resolution of this ambivalence because of the intensity of the mother-daughter conflict.

DISCUSSION

In examining the data in terms of the Metraux-Mead hypotheses, evidence was found confirming many of the hypotheses. In some instances the TAT did not yield material pertinent to the hypotheses. In some instances our findings seemed to be discordant with the hypotheses.

In the father-son son-father relationship, we found the father seen by the son to be dominant, controlling, firm, as a disciplinarian, and as head of the household. He participates actively in the education and development of his son.

There is no direct aggression toward the father figure. This concurs with the Metraux-Mead hypothesis which states that a sinister male mythological figure outside the foyer is an available recipient of negative

feelings and fears. The mythological figure is not found in our data. Instead, we find anthropomorphic characters and vague externalized forces as a vehicle for the expression of aggression. The Metraux-Mead hypothesis further states that the child uses distantiation as a mechanism for dealing with dangerous impulses. Most of the boys in this study use this mechanism of distantiation to express their aggression. The ability to express aggression by anthropomorphic and externalized means (distantiation) seems to be the psychological safety valve referred to by Metraux and Mead, and consequently in most cases the son does conceive of the father as succoring, protective, and undestructive. The son does recognize the father's superiority and rebellion is considered dangerous. Our data also reveal that as the intensity of the aggression decreases, the identity of the aggressor becomes more clear. That is, in stories where there is indirect aggression such as spiteful behavior, the father-son figures are more easily recognizable. No evidence was found regarding the Metraux-Mead hypothesis concerning the father's permissiveness toward his adolescent son's sexuality.

Concurring with Metraux and Mead, we do find some evidence bearing on the conflict in fantasy between father and son for a young woman figure. The evidence is indirect inasmuch as the rivalry figures are not clearly identifiable as father and son. Nevertheless the stories are highly suggestive. Perhaps the Oedipal theme is too strong a conflict to be dealt with directly.

In the father-daughter, daughter-father relationship, the father is also seen as dominant, controlling, firm and head of the household, but to a much less extent than with the boys.

While only two of the thirteen girls see the father as affectionate, warm, and understanding, almost all see him as sexually attractive. Our evidence, agreeing with the Metraux-Mead hypothesis, shows that the father-

daughter relationship keeps within the bounds of propriety. We find no evidence of incest which Metraux and Mead say may take place under unfavorable economic and social conditions. Metraux and Mead further state that the displacement of destructive masculine qualities onto a symbolic figure outside the *foyer* seems to operate for the daughter as well as for the son, and that consequently the father is seen as a protector, as unfrightening, a sexually attractive figure. Our findings, while indicating the father as being sexually attractive, also point to a male figure as being aggressive and threatening and most of the girls are fearful of an attack from a male figure. A question arises as to why there is this disparity between our findings and the hypotheses. A possible explanation may be that guilt is aroused in the girl because of sexual attraction toward the father. She handles this guilt by denying these feelings and consequently sees males as threatening and aggressive. This disputed point needs further clarification.

More girls than boys see the father as aggressive and threatening. More boys than girls see the father as affectionate, warm, and understanding. This seems to point up an important difference in the way the father is viewed by the boys and by the girls.

In view of the fact that more girls see the father as aggressive, it might be expected that more girls would show hostility toward the father. This is not the case. There seems to be an equal amount of indirect aggression on the part of the boys and the girls. This raises an important point as to how fearful the girls really are of the father. We are inclined to think that perhaps some of the stories showing a male figure attacking or threatening a girl are wish fulfillment fantasies on the part of the daughter. If this is so, our findings would be more nearly in accordance with those of Metraux and Mead.

In the mother-son son-mother rela-

tionship, it is found that the mother is quite active in the disciplining and controlling of the son. From the data she seems to be equally as important as the father in this respect. In no case is one parent found contradicting another with respect to discipline. This supports the Metraux-Mead hypothesis concerning the unity of the household and the noncrossing of the lines of the dyadic relationships. There is no direct aggression toward the mother just as there is none toward the father. However, there is indirect aggression, spite, and disobedience. Externalized and anthropomorphic mechanisms are less frequently employed than with the father. Almost half of the boys tell stories in which a woman is attacked and murdered by them. In part, this confirms the Metraux-Mead hypothesis in which it is stated that no common female image onto which the child could project negative and hostile feelings was found. In addition, we found that the aggressive feelings seem to be permissible only when there is ensuing guilt and punishment.

Almost half of the boys see the mother as sexually attractive. Metraux and Mead find that in some social classes the mother may have sexual relationships with her son's friends and companions. Evidence of this is not found in the TAT stories, nor would we expect to find it here. Metraux and Mead say further that the direct expression of sexual feelings cannot be shown to the mother.

There is some evidence to indicate that the mother plays an important part in the son's marriage. Metraux and Mead have found that the mother has the deciding voice in the son's marriage in most social classes.

A majority of the boys see the mother as affectionate and as someone to turn to in time of trouble. This is consistent with the Metraux-Mead hypothesis that the mother is the chief source of gratification as well as the chief source of restriction.

Also concurring with the Metraux-Mead hypothesis are the findings that the mother is active in supervising and helping in the education of the son.

It was found in the TAT's that the mother-daughter daughter-mother relationship was the most strained of all the dyadic relationships. The mother seems to play a much more important role than the father in the disciplining and education of the daughter. While there is little direct rebellion against the mother's control there is much indirect aggression, spiteful and disobedient behavior. Almost all of the girls use externalized forces to aggress against the mother. We find only half as many boys using this mode of aggression against the mother. There is no fantasy figure outside the *foyer* on which the daughter could place her negative feelings. This agrees with the Metraux-Mead hypothesis. Many Oedipal situations occur when the mother is conveniently disposed of and the daughter has the father to herself and helps him to care for the family. Metraux and Mead state that in the event of the mother's death or absence, the adolescent daughter can usually fill the mother's role other than the sexual one. The many Oedipal stories seem to confirm this.

Much guilt is aroused in the daughter by her aggressive wishes toward the mother—one indication of the development of strong super-ego controls.

Most of the rivalry between daughter and mother centers around the role of motherhood. Metraux and Mead state that many French mothers tend to insist on their daughter's inadequacy and immaturity as long as possible. The TAT stories indicate that this is achieved through the very close control exerted by the mother over all the activities of the child.

The mother is not only a disciplinarian, she is very active in the training and socialization of the daughter. She frowns upon any signs of im-

moral behavior. The daughter is taught to be considerate of others and any aggressive behavior on her part is not welcome.

Despite the rivalry with and aggression toward the mother, there is much ambivalence in the daughter's feelings. This ambivalence is characterized by the hostile wishes toward the mother and the drive toward independence as opposed to equally strong needs for maternal love, affection, guidance, and control. There is little resolution of this ambivalence because of the severity of the mother-daughter conflict.

There is no evidence in the TAT to confirm the Metraux-Mead hypothesis that the daughter turns to the father for favors and appreciation denied by the mother. The evidence does indicate, however, that there is less hostility toward the father figure than toward the mother.

A few additional points bear discussion here. There is a strong sense of family unity and loyalty which is revealed in stories told by every subject. Although there are many instances in which the dyadic relationships are shown to have some degree of tenseness and where the child may show rebellion against parental authority, the rebellion is rarely overt. The child's sense of duty to his family is so strong that he feels compelled to accede to parental demands and to accept parental goals as his own. For these children, loyalty to family is the first commandment and any action which endangers the unity of the *foyer* is taboo. It may be said that his sense of family loyalty is, in part, the basis of loyalty to country. In one story, in urging the son to fight well for his country, the father couches his admonition in terms of maintaining family honor as well as in terms of serving France.

This feeling of the importance of the family which is instilled in the children makes evaluation of the dyadic relationships within the *foyer* of even greater importance. Without ex-

amining the data in terms of individual relationships, it could be inferred from the above discussion that these relationships would necessarily be very strong. Analysis of the stories confirms this supposition. Not only are the ties binding son and daughter to father and mother strong, there are also strong elements of both tender affection and strict discipline in these relationships.

SUMMARY

The numerical differences between boys and girls with regard to their conception of parental roles point in a significant direction. The small size of the sample population precludes subjecting the data to a finer statistical analysis such as chi square.

This study has attempted to examine certain hypotheses about French family relationships through an experimental approach. Many of the Metraux-Mead hypotheses concerned with the four basic dyadic relationships have been confirmed in this study. For those which were not confirmed, an attempt has been made to analyze and clarify the discrepancies. A few, such as those regarding the daughter's choice of a husband and the mother's attitude toward the daughter after marriage did not lend themselves to analysis from the TAT data. In many instances the data have clarified and expanded upon the original hypotheses. The study further offers an operational method of measuring the child's conception of parental roles. It also furnishes us with pertinent additional data on French cultural patterns.

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Attitudinal Correlates of Rorschach's Experience Balance¹

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In his original thesis (6), Rorschach took pains to delineate his concept of Experience Balance, EB, as a perceptual set or generalized attitude underlying overt behavior. This shift of emphasis from the content of associations to a method of perceiving, or, to use Rorschach's term, experiencing, thus presaged a distinction between perception and reaction currently recognized in personality theory (1). Unfortunately, Rorschach embedded this theory in a wealth of descriptive material, especially in the illustrative ideal types so popular in his day. The ensuing studies on Rorschach's technique have concentrated largely on this descriptive typology, and the theory which he considered his chief contribution, i.e. of personality based on modes of perception, has been neglected and almost obscured.

The present study is one of a series of papers (5) attempting to determine empirically the correlates of the M : Sum C ratio. Purely empirical results are, of course, never unequivocal. Such results, however, may be utilized to refine and expand upon Rorschach's conceptual framework.

Rorschach assumed the M : Sum C ratio to measure the individual's balance between perceptions determined by subjective ideation and perceptions dependent upon immediate environmental experience. Rorschach maintained that these perceptual sets manifested themselves in many ways in overt behavior but were particularly evident in verbalized attitudes.

The earliest attempts to validate his assumptions utilized questionnaires purporting to measure introversion, ignoring Rorschach's distinction between this popular concept of social introversion-extraversion and his own concept of perceiving through intra-personal versus extra-personal stimuli. To demarcate his meaning, Rorschach introduced the terms extratension and intratension. It is therefore understandable that the results of these studies were for the most part negative, as Hertz (4) concluded in her review. More recently, attempts have been made to determine empirically the patterns of verbal attitudes accompanying certain types of the movement response (7) and of color responses (2). However, neither Thompson's study (7) nor that by Clark (2) encompassed the movement color ratio as a unit, and each considered only isolated aspects of the respective determinant in question.

PROCEDURE

To sample verbal attitudes the Minnesota Multiphasic Personality Inventory (MMPI) was selected because of the number and variety of items in this pool. From a population of psychiatric patients to whom the Rorschach had been administered 120 subjects, who also took the MMPI, were drawn, such that 30 cases fell into each of the four EB groups, Extratensive (E), Coarctate (C), Ambiequal (A) and Intratensive (I).³ The method of determining

¹ Read at the 1954 meeting of the Western Psychological Association.

² This study was accomplished while the author was an instructor at the School of Medicine, Washington University, St. Louis.

³ From a population of 481 patients from the Washington University Clinics and Homer G. Phillips Hospital, St. Louis. The author is indebted to Miss Ruth G. Dixon for use of the cases from Homer G. Phillips Hospital. The sample consisted of 49 white males, 32 white females, 13 Negro males, 26 Negro females. Age was evenly distributed

these categories was described in detail in the first paper of this series (5).⁴ No significant sexual or racial differences existed among the four EB groups.

Two hypotheses were tested using these data. First, the most obvious question to be checked was whether the EB groups were characterized by differences on the MMPI diagnostic scales, i.e., whether they followed any commonly used schema of subjective verbal behavior. For this purpose, the median of the total sample was calculated for each of the usual nine MMPI scales, plus Drake's (3) scale of social introversion. Using these median T-scores as cutting points, the four EB groups were contrasted on Chi Square tables.

Second, this pool of 550 items (disregarding the scales) was analyzed to determine what other patterns of verbal behavior might characterize the EB groups. Specifically it was posited that distinctive patterns of verbal behavior would appear, consistent with the different kinds of emotional perceiving which Rorschach attributed to each EB group, as discussed in the first paper of this series (5). For each MMPI item, the EB group having the highest or lowest frequency of the deviant response (that opposite to the one given by the normal population)⁵ was contrasted with the sum of

the frequencies of the other three EB groups, also on Chi Square tables. The EB groups were also contrasted individually one against the other, but most of these differences appeared to be a function of the overall distinction between an extreme group and the rest of the sample. These differences between separate EB groups are indicated in the tables which follow by the respective initial letters in parentheses.

RESULTS AND DISCUSSION

Differences between the EB groups on the MMPI scales were so few as to be of doubtful significance and do not warrant discussion here. Although Rorschach discussed the EB in terms of diagnostic categories, he did not maintain that the EB was diagnostically discriminating. The psychiatric nosology of the MMPI derives, of course, from symptom patterns rather than from relationships between perceptual modes. The lack of relationship between Drake's IE scale and the EB groups adds further weight to Rorschach's distinction between the concept of social extraversion-introversion and his own concept of perceptual sets.

The MMPI items which statistically differentiate the four EB groups are presented in Table I. Regarding the I group, casual inspection suggests none of the traits commonly attributed to the movement response, i.e., imagination, creativeness, withdrawal into fantasy. It is possible, of course, that the MMPI does not adequately sample these traits. When the source of the attitude rather than the content is considered, a categorization of these intratensive items into three groups appears. The first group affirms the constancy of intrapersonal activ-

among the four EB groups, ranging from 18 to 70 years, mean age 32.81. The MMPI was administered only to patients with Wechsler Bellevue IQ's above 80, range 80-137, mean 108.36. Relationships between IQ and EB are reported elsewhere (5).

⁴ Briefly, the formula

$$EB = \left[\frac{100 (M - \text{Sum } C)}{R} \right] + 100$$

was standardized on the clinic population of 481 patients. Extratension was defined as all scores below Q1 or 90, intratension as above Q3 or 105, coartation as between 90 and 105 when component ratios M/R or Sum C/R fell below their respective medians (.08 and .12), ambiequality as any score between 90 and 105 with both component ratios above their medians.

⁵ Only the deviant true or false response was counted. The cannot-say category was ignored and in effect counted as not deviant.

The writer is indebted to Dr. Benjamin Pope who tabulated the cannot-say responses separately, discovering that no item was disproportionately affected and that therefore no gross error was committed in ignoring this category.

TABLE I—MMPI Items Distinguishing the Four Experience Balance Groups.

NOTE. MMPI item number is followed by T or F to denote True or False. All items are significant at the .10 level of confidence, * indicates the .05 level, ** the .01 level. All items distinguish the respective group from the other three EB group combined unless otherwise noted. Initials in parentheses indicate that this item additionally distinguishes these respective EB groups.

INTRATENSIVE ITEMS

Group 1. Constancy of intra-personal activity. A-6, T (IC*); A-21, F* (IE*); A-38, F (IE*); B-18, T* (IE*); B-20, T* (IE*); G-18, F** (IC*); G-22, F* (IE*); G-34, F**; I-19, F** (IE*, IA*).

Group 2. Environmental independence. C-32, F* (IE*); C-40, F** (IE**, IC*); C-55, F* (IE*, IC*); D-13, F; E-23, T* (IE*, IC*); F-8, T; I-16, F (IE*); J-30, F; J-49, T* (IE*, IC*); J-51, T* (IC*).

Group 3. Self-dissatisfaction and self-awareness. A-7, F** (IC*); B-39, F (IA*); C-8, T** (IC*); C-12, T (IE*); C-47, F* (IE**, IA*); I-18, T* (IE*, IA*, IC*).

Unclassified. I-5, F* (IE*); I-42, F* (IE*)
E-19, F (IE only).

EXTRATENSIVE ITEMS

Group 1. Need for environmental consistency. B-43, T*; C-38, T* (EI*, EC*); D-1, T* (EI*); D-35, T* (EC**); D-41, T* (EI*); D-47, T* (IE*, EC*); E-5, T* (IE*); E-19, T (IE only*); E-23, F* (IE*, EA*); G-55, T; H-11, T** (EC*); H-22, F; H-45, T** (IE**, EC*, EA**); I-16, T* (IE*); I-43, F* (IE*, EA**).

Group 2. Self-satisfaction or denial of self-awareness. A-39, T* (IE*, EC*); B-35, F* (EC*); C-47, T* (IE**); C-50, T** (EC*, EA*); D-24, T*; D-26, T; G-43, F* (IE*, EA*); I-36, F; I-40, T** (IE*, EA*); I-41, F.

Group 3. Lack of intra-personal constancy. A-30, T; A-49, T; A-54, T*; B-2, T*, B-36, T* (IE*); J-8, T*.

COARCTATE ITEMS

Group 1. Denial of interpersonal concern or social distance. C-42, F; D-48, T; D-53, T** (CA**, CE*); E-15, T; E-30, F; F-11, T; F-14, T*.

Group 2. Denial of intrapersonal awareness. A-15, F (AC); A-41, T** (AC**, CE**); D-33, F; E-51, F* (AC**); F-32, F* (AC*, IC*); I-24, T** (CA**, CE*, CI*).

Group 3. Lack of either intrapersonal or environmental constancy. A-2, F* (CA*, EC*); A-46, F (CA); B-7, T* (CA*); B-9, F* (CA*, CE*); B-25, F* (CA*, CE*); B-42, T (CE*); D-17, T; D-18, T (CA**); D-35, F** (EC**); E-19, F (AC only**); G-14,

T; G-48, T*; H-30, T*; H-50, T* (EC*); J-4, T* (CA*, EC*);
Unclassified. J-22, F** (CA*, CI*, CE*); J-32, T* (CA*, CI*, CE*).

AMBIEQUAL ITEMS

Group 1. Constancy of intrapersonal activity. A-11, F; A-13, F* (CA*, AE*); B-2, F* (AE*); B-7, F (CA**); B-23, T; C-33, T; C-34, F* (CA*); E-22, T* (EA*); E-26, T*; F-20, F* (AC*, EA*); G-25, T; G-40, F.

Group 2. Need for environmental constancy. C-51, F** (CA**, CI**, CE**); C-53, F; D-2, F* (EA*); D-7, F; D-30, F; D-50, F (AI*); E-7, F (EA*); E-19, T (AC** and IE** only); G-53, T*; I-21, F.

Unclassified: I-46, T* (AI*); J-26, T*.

ity. The intratensive individual has few doubts that the self is a reasonably stable basis from which experience may be interpreted. This self-reliance is further evidenced in the second group of items which declare a relative independence from environmental press, denying any need to conform or to relate to others. The third item group indicates that an awareness of the self includes a critical attitude of introspection, not a self-satisfaction. Only three items do not readily lend themselves to this interpretative scheme.

As was true of the I items, the E items appear miscellaneous and confusing when only the specific content of each separate item is considered. Extratensity is not here defined by the usual attributes of social affability, affective expression, aggressiveness or impulsiveness. Indeed, these data suggest almost an opposite complex of traits. There is a definite trend in these items toward a strait-laced morality rather than emotional spontaneity. Impulsiveness is directly denied by such items as D-35 and J-43. These items do not, however, contradict the definition of extratensity as a perceptual mode dependent upon extra-personal stimulation. This environmental dependence is illustrated in the first item group, throughout which there is expressed a need for environmental constancy and an almost hyper-acute awareness of extra-personal stimulation. Projection

onto the environment of a paranoid degree is expressed. The items in E group 2 denote an obtuse lack of self awareness and a self-satisfaction of megalomaniac proportion. On the other hand, the attitudes contained in E group 3 indicate that the self is not a constant, dependable basis for experiencing. Apparently this dependence on the environment creates a sense of intra-personal inconstancy which the avowed self-superiority does not manage to cover. There is an uneasiness about the self, without the open admission of guilt and disappointment allowed by the I group.

The attitudes of the Coarctate group scarcely depict the pedant which Rorschach used to exemplify this experience type. The emotional rigidity often attributed to the C group in clinical practice would seem contraindicated by such items as D-35 or J-4, if these items are considered in isolation. However, the attempt of the coarctate person to remain emotionally neutral both to his environment and to his own needs is well depicted in the items listed under coarctate as groups 1 and 2. In group 1 this experience type disavows concern over either intra-personal or extra-personal events. The C person is typically an individual with no regrets; his lack of intrapersonal awareness is also characterized by his denial of physical upheaval (though not of somatic complaints), by absence of self-blame or admission of social failure. This emotional neutrality is maintained at the expense of either intrapersonal or environmental constancy. This absence of a secure base for the admission of emotional stimulation is the most prominent correlate of the coarctate person, as witness item group 3. Hypochondriasis, re-incarnation, alcoholism and phobias appear as defenses against the anxiety engendered by this failure to establish a perceptual set.

The Ambiequal group Rorschach found most difficult to describe. When

the items were considered under the same rubrics used for the other EB groups, only two attitude complexes appeared. Group 1, the need for self-constancy, parallels the first group of items distinguishing the I category, primarily denying physiological and social dysfunction, yet maintaining a self-responsibility and independence of functioning. Side by side with this attitude complex is group 2, the contrasting extratensive need for environmental constancy, the assertion of social mores (especially regarding sex) and dependence upon the emotional support of others. The A group is not so exaggerated in their environmental dependence as the E group, but seems to emphasize an internalized social conscience rather than externally imposed rules for behavior. Absent in the A attitude complex are the feelings of inadequacy and dysfunction so prominent among the C items, the introspection of the I group or the paranoid uneasiness of the E group. This absence of conflict suggests that the utilization of both modes of perception, of both the self and environment as bases for experiences, creates the balancing effect which Rorschach posited for this type.⁶ These results are even more surprising when it is remembered that the MMPI contains a large sample of items relating to conflict but not concerning integration of attitudes. The fact that these subjects were not well-adjusted suggests that they suffered other disturbances than an imbalance of perceptual functioning.

SUMMARY

Considering Rorschach's experience

⁶ Two items in Table 4, I-46 and J-26, do not easily fit into these categories. The preference for Carroll's classic Alice in Wonderland may be interpreted as the leitmotif of ambiequality in that the essence of Carroll's allegory is the introspective attitude which Alice maintains from the moment she steps through the looking-glass and the accompanying balance with which she objectively experiences the satirized environment with which Carroll surrounds her.

types as emotional sets or attitudes governing perception, it was hypothesized that these attitudes would be reflected in patterns of verbal behavior, as sampled by the MMPI. Thirty of each of the four EB types were drawn from a population of psychiatric patients to whom both the Rorschach and the MMPI had been administered.

Two possibilities were explored. First that the EB groups might be distinguished by differences on commonly used verbal patterns, the diagnostic scales of the MMPI, with particular interest in Drake's IE scale. Second an item analysis was conducted, searching for other patterns of verbal behavior which might characterize the EB groups. It was expected that item patterns would appear consistent with Rorschach's theory of emotional perception as discussed in an earlier paper (5).

No significant degree of difference appeared among the four EB groups on the MMPI scales. The EB modes of perceptual functioning cut across diagnostic categories, Drake's IE scale has no relation to Rorschach's concept of intratension and extratension. Lists of items were derived distinguishing each EB group from the other three groups. When the con-

tent of these items was considered, few if any of the specific traits attributed to the EB groups in the current literature and in clinical practice appeared. However, viewing the item lists as verbal expression of perceptual attitudes, each list could be subdivided into three headings: self-constancy, environmental constancy and feelings of dysfunction. These verbal attitudes were consistent with the rationale posited for each EB group.

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Evaluation of Personality by Viewing a Motion Picture¹

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Clinical psychology and communications research share an assumption that an individual's personality may be ascertained by means of an analysis of his creative production. The individual telling a story, for example, is engaged in a creative act even if the stimulus is relatively structured. This assumption underlies the use of projective techniques and the interpretation of productions of individuals undergoing psychoanalysis.

Communications research assumes that all regions of the communications field are interdependent or, in other words, that the personality of the communicator is related to both the content of the communication and its effects. There have been relatively few studies of this relation, but an example is that of White's (1) analysis of the personality of Richard Wright through a study of his autobiography, *Black Boy*. White's procedure was to compare, by means of content analysis, Wright's book with written autobiographies of eight college students. Literary critics, of course, are often engaged in personality description as revealed by the written document.

No experimental studies of the above assumption are reported in the literature, to the author's knowledge. The present investigation was undertaken to contribute some experimental evidence on this assumption.

The general hypothesis tested was the following: 1. The personality of a communicator can be ascertained from his creative production by

trained clinicians in agreement with that found by an independent assessment of his personality.

METHOD

To test this hypothesis, the author administered a Rorschach to the creator of the color film, *Uirapuru*, Mr. Sam Zebba. This film is an enactment by natives of the Amazon jungle of a story of a legendary bird of love, the *Uirapuru*, and has background music by Villa-Lobos. The film has won international prizes in Europe. With the exception of an introductory narration, there is no dialogue in the film. The Rorschach was interpreted "blind"—that is, with no information other than the fact that the subject was an adult male—by Dr. Bruno Klopfer. From this interpretation, which was recorded verbatim, twenty-five "true" statements about the personality of the subject were derived and agreed to be "true" by Dr. Klopfer, on the basis of the Rorschach. Twenty-five "false" statements were then added to this list. The latter were devised so as to be logical opposites of the "true" statements. This was done in the hope of ascertaining a kind of "consistency-quotient" among the clinicians who were to view the film. It was belatedly recognized that logical opposites are not psychological opposites, and that it is quite possible for logical contradictories to be psychological compatibles. The twenty-five "false" statements were randomly combined with the twenty-five "true" ones, however, to serve as a ground or contrasting influence.

The experimental design was simply to show the film to a variety of clinicians, administer the statements as a true-false questionnaire about the man that made the film, and compare the clinicians' judgments with those of Dr. Klopfer in terms of proportion of

¹ Part of a doctoral dissertation in personality and perception completed at UCLA in 1952. Thanks are extended to Professors Franklin Fearing and Bruno Klopfer for their assistance, to the Veterans' Administration for providing facilities and clinicians' time, and to Mr. Sam Zebba, who generously exposed both his artistic production and his own personality to study.

agreement. If the proportion of agreement, in comparison to a control group, reached significance, then the hypothesis would be assumed to be validated.

To this end, forty-four clinicians and a control group were shown the film, *Urapuru*, and asked to complete the true-false questionnaire. The questionnaire is reproduced in Chart 1. For obvious reasons, the "true" statements will not be indicated. Subjects were asked to indicate their clinical specialty and, for clinical psychology trainees, to indicate in which of the four years of training they were.

CHART 1—Statements Concerning the Personality of the Communicator

1. He tends to organize his thinking carefully and elaborately.
2. He is a very gifted person.
3. Original elaboration of common concepts is characteristic of his creative approach.
4. His thinking is characterized by sticking to facts and avoidance of broad generalizations.
5. He feels encumbered by responsibilities and has a strong sense of duty.
6. He handles acute emotional stimulation from the environment better than he handles his own emotional needs.
7. His relationship to people has a "sticky" quality.
8. He is overtly gentle and passive in his contact with people.
9. There is an "accumulating" characteristic to his ambition.
10. He struggles with his emotional needs rather than repress or run away from them.
11. He has strong needs for organizing and integrating his intellectual life.
12. There is little of the actor in his behavior since he feels no need for it.
13. His thinking often tends to be confused and slipshod.
14. He is adjusted to his psychological role as a man.
15. The esthetic is, for him, feminine.
16. His creative abilities are not particularly remarkable.
17. He is partly aware of his major problem.
18. He tends to go off the beaten track for creative ideas.
19. He has an intense conflict about his sexual identification.
20. Emotional situations stimulate and clarify his mental activity.
21. He is better able to cope with his own emotional needs than with a stressful environmental situation.
22. Repression or escape are his major mechanisms for dealing with his emotional needs.
23. He can slide out of a relationship very easily.
24. He never feels tied down to persons or things.
25. He covers his passive needs for fear of appearing too gentle.
26. His thinking becomes erratic in response to emotional stimulation.
27. He lacks insight with regard to his conflicts.
28. His ambitions are toward quality rather than quantity of production.
29. He feels that the sexual act is a combination of passion and tenderness.
30. He is so eager to accept the cultural role of a man that he is willing to forego satisfactions and needs which conflict with it.
31. Play-acting is a mask he wears to hide his conflicts from others.
32. Parties and social events bore him.
33. He is quite able to cope adequately with situational problems.
34. He perceives the environment fairly objectively and distinctly.
35. When alone he feels lost and empty.
36. He has made a choice between art and power.
37. It is difficult for him to establish deep and tender relationships.
38. He is quite spontaneous.
39. He conceives of the masculine role as forbiddingly authoritarian.
40. Masculinity is, for him, wisdom and kindness.
41. Sexuality and tenderness are separate and distinct for him.
42. He feels that he must accept the culturally prescribed role of masculinity, but is not willing to give up those of his needs which conflict with that role.
43. He is equally attracted to a masculine role of mastery and control on the one hand, and a feminine role of the esthete on the other hand.
44. He tends to be rather over-controlled and rigid.
45. When confronted by a problem, he succumbs to it.
46. He is characterized by having a rich inner life.
47. He enjoys being with people.
48. His needs tend to interfere with his perception of reality.
49. His major strength lies in the ability to establish mature relationships.
50. The esthetic is vigorous and forceful from his point of view.

The groups were as follows:
Control: Total 5; two secretaries, two occupational therapists-in-training, and one hospital attendant.

Psychologists: Total 23
 First year trainees: 5
 Second year trainees: 11
 Staff psychologists: 7
 Psychiatrists: Total 9
 Resident psychiatrists: 6
 Staff psychiatrists: 3
 Psychiatric Social Workers: Total 11
 Chief Psychiatric Nurse Instructor:
 Total 1

All clinicians and controls were employees of the Veterans' Administration hospital (Sawtelle) in Los Angeles. The psychology trainees were all part-time employees of the hospital and graduate students in clinical psychology at the University of Southern California or the University of California, Los Angeles. No third or fourth year trainees were included. The staff psychologists were Ph.D.'s in clinical psychology. The resident psychiatrists were in various stages of training, the staff psychiatrists were regular staff members. The psychiatric social workers had two or more years of experience and were regular staff members. There were several psychiatric nurses-in-training who saw the film but declined the questionnaire on the ground that they did not feel competent to make these judgments. Two resident psychiatrists did not feel they could answer all the questions, so they were not included.

The various clinical groups were divided in the above fashion on the assumption that there would be group differences. It was hypothesized, that amount of training would be an important factor in the degree of agreement with Dr. Klopfer's findings.

RESULTS

The results are summarized in Table I. The control group averaged 55% agreement, which is not beyond that expected by chance alone. The clinicians, on the other hand, averaged 68% agreement, which is significantly better than chance, and significantly better than the control group at beyond the .01 level of con-

TABLE I—Percentage Agreement with Klopfer by Various Clinical Groups

Group	N in Group	Average % Agreement
Control.....	5	55.2
All Clinicians.....	44	68.1*
1st year trainees.....	5	61.6
2nd year trainees.....	11	64.7
Staff Psycholog.....	7	71.4
Psychiat. Resid.....	6	70.0
Staff Psychiat.....	3	68.0
Psychiat. Soc. Wks.....	11	68.4
Chf. Psych. Nurse.....	1	96.0

* Significant at .01 level with respect to Control.

fidence. The hypothesis that clinicians can ascertain the personality of a creator of a film in agreement with the Rorschach findings appears to have received confirmation.

With regard to the second hypothesis—that level of training is an important factor in the degree of agreement—the results are also summarized in Table I. There are no significant differences among the clinical groups, but there is a tendency for the percentages to increase with the level of training and experience. Since the Rorschach is a psychological instrument, it might have been expected that psychologists would do better than psychiatrists or social workers, but this is not the case. The lack of significant differences among the clinical sub-groups bespeaks a singular agreement in clinical knowledge. The wording of the statements, however, undoubtedly favors psychiatrically-trained people, in contrast to the control group. The extent that this factor influences the results, of course, is unknown. All of the controls, however, understood the meaning and sense of the statements.

No analysis of individual differences was done. A score which an individual would have to attain in order to reach the .05 level of confidence is 68%. None of the control group achieved this, but half of the clinical group had 68% agreement or better.

To refine the experiment further and ascertain whether it was, indeed,

the film which gave the clinicians their cues to evaluate the personality, two more controls were instituted. One control group of five graduate students in clinical psychology were given the questionnaire with only the information that the subject was an adult male. This control, which was used to find out if there were anything in the questionnaire itself which would provide cues, averaged only 48% agreement, with no one exceeding 53%. It is clearly not the questionnaire, itself, which provides the clues for personality interpretation.

A second control group was used to see if preliminary information about the man who made the film provided clues for the interpretation. The following excerpt was provided the clinicians who saw the film in order to announce its showing and occasion a maximum turnout:

The technicolor film, "Uirapuru," will be shown (date and place provided) in connection with a Ph.D. dissertation. The movie is an enactment by natives of the Amazon Jungle of a story of a legendary bird of love, and was filmed in Brazil by a graduate student at UCLA. With background music by Villa-Lobos, the film has won international prizes in Europe. It has been thought to be a most unusual and entertaining film by audiences in this country.

Also appended was a word about the hypothesis to be tested and the fact that no identifying data, other than clinical speciality would be asked for.

The above excerpt was given to a group of clinicians, along with the questionnaire, to ascertain to what degree this information, rather than the film, provided relevant cues for personality interpretation. These clinicians included one first year trainee, one second year trainee, two third year trainees and a clinical psychologist from a different institution.

The results with this second group

showed a percentage of agreement ranging from 48% to 76%, the average being 58%. There was a very definite trend for the percentages of agreement to increase as a function of level of training. In comparison with the experimental groups, the film appeared to contribute about 10% toward total agreement with Klopfer, when the effect of the introductory information is deleted. It is this average difference, however, that provides the degree of significance.

SUMMARY

The following hypothesis was tested: The personality of a communicator can be ascertained from his creative production by trained clinicians in agreement with that found by an independent assessment of his personality.

From an interpretation of a Rorschach given to the creator of a film, a true-false questionnaire about the man who made the film was devised and given to forty-four clinicians after they saw the film. The clinical group did significantly better than chance, and significantly better than a control group of hospital employees. There was evidence that the percentage of agreement increased with level of training.

The results from two additional control groups indicated that the questionnaire, itself, offered no cues for interpretation of the personality, but that the preliminary information provided about the man who made the film did so. It was shown that it was necessary to see the film, however, in order for the clinical group to do significantly better than chance.

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Developmental Changes in Content of Movement Responses¹

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Within the past several year clinical psychologists have become increasingly interested in Rorschach content and two recent articles in this journal indicate the rising importance ascribed to it (3, 19). Although Rorschach considered content of "secondary importance," certain qualitative aspects of the human movement responses were not so regarded. He observed that flexion movement characterized "passive, resigned, neurasthenic individuals," whereas extension movements were found in "active individuals with strong drive toward self-assertion." He also surmised that the prognosis for analysis was "probably more favorable in cases where kinaesthesias of extension predominate than in cases in which flexion movements are more numerous" (14).

Rorschach's qualitative distinction between the movement responses was generally accepted by clinical psychologists (2, 9, 12). Piotrowski advanced the hypothesis of a developmental change from a childhood assertive M to the complaint M of the adult. He observed that only in a "very small minority of subjects examined" did a change occur in an opposite direction. As an explanation for the transformation to compliant responses, he states the following:

Apparently all of us would have a basic attitude of confident self-assertion if there were no frustrations and no conflicts with others. These conflicts and the need to adjust to more powerful and potentially dangerous persons on a basis of compliance or

even submissiveness undermine self-assertion. Therefore, we can always conclude that when an individual produces compliant M, he has had to face obstacles so strong that he could not develop or maintain an attitude of self-assertion. . . . Aggressive M may be a sign of transition from assertion to compliance. In this connection it may be pointed out that children produce more aggressive than compliant M's. Childhood is the period in which self-assertion is very frequently weakened by environmental stress.

Two studies are relevant to the above hypothesis. Ames *et al* (1) report a normative study of 650 children 2 through 10 years of age described as having both superior socio-economic status and intelligence. Their classification of human and animal movement into extensor, flexor, and static responses disclosed an irregular increase in extensor M which became the predominant type from 6 through 10 years. "Flexor movements increase after 5 years reaching their high points at 7 and 10 years but never predominating." There was no indication that flexor responses were gaining on the extensor responses. They conclude, "Thus if we assume that the M responses do reflect the individual's role in life or the nature of his psychic activity, then it would seem from our data that this role becomes increasingly active and increasingly capable of expression as the child matures." They classified the FM responses "along approximately the same lines as M responses" and found that strong extensor movement predominated at all ages and that FM was, in general, consistently more active than M. With regard to aggressive M, the only activity listed in their tables which can be so regarded is "fighting" which remained at a low frequency level throughout with the exception of the 8 year group.

¹ This article is a major portion of the dissertation presented in partial fulfillment of the requirements for the Ph.D. at New York University. The author would like to express his appreciation to Dr. Kalinkowitz for his critical suggestions and helpful guidance, and to the other members of his committee, Dr. Ben Avi and Dr. Schwebel, for their counsel.

The frequency of FM "fighting" responses was greater than M for all ages except 8 years but remained relatively stable until 9 and 10 years when it increased sharply.

Thetford reported a comparative study of 50 schizophrenic children with 179 public school children of normal intelligence. The age range was 6 to 17-6 years, the subjects being divided into three age groups; 6 through 9, 10 through 13, and 14 to 17-6 years (16). Human movement was scored as extensor, flexor, static, and ambivalent. Quantitative results were not presented and the discussion concerned the comparison of schizophrenics with normals. However, he does indicate an increased amount of active M in the adolescent group. Human movement was also scored by the seven-step Zubin scale (20) measuring the amount of energy in the response. Normal adolescents had the highest energy level, the youngest group were second, and the 10 through 13 year age group had the least energy level. Thetford described the 10 through 13 years group as being constricted in regard to a number of psychological processes.

The appearances of aggressive human movement in the Ames *et al* study may mark the transition from assertive to complaint M called for by Piotrowski's hypothesis. Although the Thetford study reports increased assertion and energy in the adolescent it says nothing about changes in compliant responses. Since frustration and the need to adjust and comply with more powerful forces are typical developmental circumstances, increased compliance should appear as a group phenomenon. Expressed in Rorschach terminology, the compliant M's should increase from childhood on. Since many clinicians employ this hypothesis in interpreting records it is necessary to test the hypothesis against normative data.

Subjects and Methodology

Human and animal movement re-

sponses were scored as assertive, compliant or ambiguous on the usual basis; extensor or centrifugal actions as assertive, and flexor or centripetal actions as compliant. Actions or positions which could be considered neither extensor nor flexor were scored as ambiguous responses.² Following Piotrowski, the few cases where extensor and flexor elements were both present, the dominating or stronger action was scored. Illustrations of frequent responses in each category were the following:

Assertive: walking, running, climbing, dancing, fighting, flying.

Compliant: lying down, hanging down, hanging on, sitting (down), leaning, bending (down).

Ambiguous: looking, standing, holding something, crying, laughing.

To analyze further whatever changes did occur and to note the relationship between aggressive responses to assertive and compliant responses, all movement responses were classified in terms of the purpose or meaning of the activity. Illustrations of these classifications and the activities subsumed under them were as shown in table on the next page.

Because of the large number of categories, frequencies for each age group would be too small to apply statistical procedures. However, trends might be evident which would clarify the data and be helpful in directing further research.

Twenty white, native-born children, 10 male and 10 female, were tested at each of three ages: 7-6 through 8-6; 11-6 through 12-6; and 15-6 through 16-6. The ages were selected to coincide with "latency," puberty, and adolescence, as well as providing equal temporal intervals. All sixty subjects were tested in two New York

²In approximately 15 per cent of the responses, some doubts remained about the proper category. Mr. Herbert Fensterheim and Mr. Joseph Lakritz kindly served as judges, and with the author as third judge, unanimity or agreement by 2 out of 3 judges determined the category of all but a few responses. These last responses were scored "ambiguous."

Hostility	fighting, quarreling, struggling.
explosions	bomb bursting, atom bomb exploding.
Social-sexual	kissing, dancing.
Sociable-cooperative	shaking hands, talking, lifting something together.
Physical activity	jumping, climbing, swimming.
Oral activity	cooking, eating, attacking prey.
Passive	hanging limp, holding on, leaning over, bending down.
Static	sitting, standing, lying down.
Curiosity	looking, watching, putting hands over eyes.
Escape-concealment-safety	snuggled in nest, running into cave.
Exhibitionism	dancing alone, doing acrobatics.
Inanimate movement	
water	river flowing, waterfalls.
smoke	smoke rising, smoke going up from chimney.
fire	fire, burning.
wind action	flowing veil, wind blowing hair.
science fiction	rocket ship blasting off, space ship taking off.
others	sun giving off rays, object falling down.
Ambiguous	making something, clapping hands, barking, laughing.

City public schools. The calculated median incomes (18) of the areas served by the schools were \$4480 for the grammar school and \$4682 for the high school. Random selection was employed in obtaining subjects. Tables were prepared with estimated I.Q. determined from the number of words correctly defined on the Stanford-Binet vocabulary test, and only those children scoring from 95 through 125 estimated I.Q. were included in the groups. The classroom teacher informed the students they would be tested and the experimenter individually explained the purpose of testing as the need to learn more about a new test, particularly for younger people in New York City. They were cautioned not to discuss the test with classmates "because it wouldn't be fair," which was apparently effective. All data was collected, coded, and the movement responses then scored by the examiner without knowledge of the age group of the subject.

The Rorschach test was administered in the manner described by Klopfer and Kelley (9) with the exception that, during the inquiry, additional questions were asked about each movement response. This was done for another study and did not affect the results reported here. The t-test for within and between groups, was employed with the level of signifi-

cance set at .05 or better. The $p/2$ measure was used where differences were tested for increased compliant M responses between age groups.

Results and Interpretation

Some major characteristics of the three groups are presented in Table I for the purpose of comparison with other samples reported in the literature and to illustrate that the samples were sufficiently alike to provide a basis for comparison. There were no significant differences in estimated I.Q. between the three groups and averages were within the normal range. With the exception of inanimate movement, average number of R, M, and FM were within the ranges reported in the literature (1, 5, 7, 8, 10, 13, 15, 17). The average number of inanimate movement at 8 years was considerably greater than gener-

TABLE I. Mean Estimated I.Q., Age, R, and Types of Movement Responses for the Three Groups of Subjects

Characteristics	8 years	12 years	16 years
Estimated I.Q.....	108.7	107.2	108.6
s.d.....	9.1	9.0	5.1
Age.....	8-2	11-11	16-1
R.....	24.83	21.05	30.15
s.d.....	11.25	9.31	16.10
Total movement...	4.01	4.75	5.92
M.....	1.10	1.60	2.39
FM.....	1.54	2.55	2.98
m.....	1.37	.60	.55

ally reported but only slightly higher at 12 and 16 years than the one study on a 13-14 year age group of New York City students (8).

There were no significant differences in average number of R between 8 and 12 years and between 8 and 16 years, but a significant increase occurred between 12 and 16 years ($p = .037$). Because of this it was deemed necessary to present results in terms of percentages in order to interpret correctly whatever changes did occur.

Results for average number of assertive, compliant, and ambiguous M and FM are presented in Table II. The significant findings of within and between group comparisons, at the .05 level of confidence, are presented in Table III. Of the 36 comparisons, 14 were significant; an order of significant findings much higher than one would expect on a chance basis alone.

For the 8 year group there were no

significant differences between the assertive, compliant, and ambiguous responses. At 12 years assertive M was significantly greater than the compliant and the ambiguous responses. At 16 years ambiguous M was significantly greater than compliant responses. (Assertive M was not significantly greater than compliant M, within the 16 year group, even though the average number of assertive M, 1.10, was absolutely greater than ambiguous M, 1.05. The p -value was .097.) For FM, assertive movement was significantly greater than compliant and ambiguous responses at all ages and, at 12 years, ambiguous responses were also significantly greater than compliant responses. An examination of between group differences discloses that assertive M was significantly greater at 12 than at 8 years and ambiguous M was significantly greater at 16 than 12 years. Assertive FM was significantly greater at 16 than 8 years and compliant FM was significantly greater at 16 than 12 years.

Because of the significant increase in R between 12 and 16 years, an examination of the relative percentages was necessary (Table IV). At 8 and 16 years the relative amounts of assertive, compliant, and ambiguous responses, for both M and FM were remarkably alike. Assertive and ambiguous M were of approximately equal frequency and compliant M accounted for only one-fifth of all human move-

TABLE II. Mean Number of Assertive, Compliant, and Ambiguous M and FM Responses

Type of Movement	8 years	12 years	16 years
M			
assertive.....	.50	1.15	1.10
compliant.....	.28	.40	.50
ambiguous.....	.45	.25	1.05
FM			
assertive.....	.98	1.95	2.00
compliant.....	.38	.15	.73
ambiguous.....	.25	.50	.60

TABLE III. Significant Differences Found for Within and Between Groups

		p-values
Within Group Differences (18 comparisons)		
M at 12 years.....	assertive > compliant	<.01
	assertive > ambiguous	<.01
M at 16 years.....	assertive > compliant	=.047
	assertive > ambiguous	=.026
FM at 8 years.....	assertive > compliant	=.050
	assertive > ambiguous	<.01
FM at 12 years.....	assertive > compliant	<.01
	assertive > ambiguous	=.050
	assertive > compliant	<.01
	assertive > ambiguous	<.01
FM at 16 years.....	assertive > compliant	<.01
	assertive > ambiguous	<.01
Between Group Differences (18 comparisons)		
M assertive.....	> 8 years	=.043
	> 12 years	<.01
M ambiguous.....	> 16 years	=.038
FM assertive.....	> 8 years	=.030
	> 12 years	=.030
FM compliant.....	> 16 years	

TABLE IV. Relative Percentages of Assertive, Compliant, and Ambiguous M and FM Responses

Type of Movement	Ames' Study 8 years	8 years	Present Results 12 years	16 years
M percentages				
assertive.....	43.2	40.8	63.9	41.4
compliant.....	20.9	22.4	22.4	18.9
ambiguous.....	35.8	36.7	13.9	39.6
FM percentages				
assertive.....	66.3	60.8	74.9	63.0
compliant.....	27.3	23.4	5.8	22.8
ambiguous.....	6.5	15.6	19.2	14.2

ment. For FM, the assertive response was the major type; compliant FM accounted for one-fifth; and ambiguous FM occurred in about one out of seven responses.

The simplest interpretation of the above data, taking into consideration the significant rise in R between 12 and 16 years, is that there is a significant increase, at 12 years, in assertive M (and probably FM also if the number of R were controlled at 8 and 12 years). For the M, this increase was at the expense of ambiguous responses and, for FM, the increased assertion depleted the compliant responses. At 16 years, the pattern reverted to the same distribution as at 8 years.

In interpreting content changes (Table V), no distinction will be made between M and FM although they are so distinguished in the table. Because of the large number of divisions, total frequencies of M and FM are more reliable measures. At 8 years, 'Inanimate movements' and 'Physical activity' were the largest classifications. For the 12 year group, 'Physical activity,' 'Hostility and explosions,' and 'Sociable-cooperative' activities were the largest, clearly indicating that the increased assertive movement was both of an aggressive and cooperative nature, although predominantly aggressive. At 16 years, 'Physical activity' was once again most frequent, followed by 'Static' and 'Hostility and explosions.' Taking into consideration, once again, the significant increase in R between 12 and 16 years, the major changes at 16 years were the increase in 'Static' responses

and the increase in three classifications with smaller total frequencies: 'Social-sexual,' 'Curiosity,' and 'Passive.' 'Physical activity' and 'Hostility and explosions' were less often perceived, absolutely and relatively, at 16 years than at 12 years. The increase in 'Passive' responses at 16 years appears to be a return to the 8 year level whereas the increase in 'Social-sexual' and 'Curiosity' responses are new phenomena.

Discussion

These results provide no support for Piotrowski's hypotheses of a change from assertive to compliant M responses. Although the increased aggressive responses found in the 12 year group should herald the transition to compliant responses, the expected change was not evident at 16 years. Rather, there was a return to the same distribution of assertive, compliant, and ambiguous M responses observed at 8 years. At all three ages, assertive FM was greater than assertive M and the same was true for the Ames *et al* sample. It is interesting to note that the relative percentages of the three types of movement in the Ames study were very similar to the percentages in this study (see Table IV). Since FM is presumed to represent the childhood mode of adjustment and M the current mode, the greater amount of assertive FM may have led Piotrowski to the hypothesis of increasing compliance. However, the relationship between assertive FM to assertive M remains fairly constant at all three ages.

TABLE V. Frequencies for Specific Activities of All Movement Responses for the Three Age Groups.*

Specific Activity	8 years				12 years				16 years			
	M	FM	m	total	M	FM	m	total	M	FM	m	total
Hostility.....		2.5		2.5	8.	9.5		17.5	3.5	8.5		12.
explosions.....			3.	3.			6.	6.			6.	6.
Social-sexual.....		1.		1.	2.5			2.5	7.3			7.3
Sociable-cooperative.....	4.	2.5		6.5	10.	2.		12.	8.3	1.		9.3
Physical activity.....	2.5	15.5		18.	5.	27.5		32.5	3.	22.5		25.5
Oral activity.....	2.			2.	1.	2.	1.	4.	1.5	4.		5.5
Passive.....	3.5	3.		6.5	1.			1.	2.5	5.5		8.
Static.....	4.	4.		8.	3.	3.		6.	9.5	12.5		22.
Curiosity.....	1.5	3.		4.5	1.5	1.		2.5	4.8	5.5		10.3
Escape-concealment-safety.....		2.		2.	1.	5.		6.	2.	2.		4.
Exhibitionism.....	3.			3.	2.			2.	2.	1.		3.
Inanimate movement												
water.....			4.5	4.5			7.	7.			2.	2.
smoke.....			5.	5.							1.	1.
fire.....			6.	6.			2.5	2.5				
wind action.....			1.	1.			.5	.5			1.	1.
science fiction.....			2.5	2.5							1.	1.
other inanimate.....			12.	12.							6.	6.
Total inanimate.....				31.				10.				11.
Ambiguous.....	2.			2.	1.	1.		2.	7.5	1.		8.5

* The columns M, FM and m do not tally with the averages presented in Table I, where, if other determinants such as color were seen in addition to movement, each was given equal weight, i.e., $\frac{1}{2}$ FC and $\frac{1}{2}$ FM. In the above table, partial scores were also given, e.g., "looking and running" was scored $\frac{1}{2}$ "curiosity" and $\frac{1}{2}$ "physical activity."

Piotrowski's hypothesis of increasing compliant M may still be true but at an age greater than 16 years.

That there is some difference in the psychological meaning of M and FM appears evident from the changes noted in the 12 year group. The increased assertive M takes place at the expense of ambiguous M whereas the increased assertive FM coincides with a decrease in compliant FM. At the M level, the relative percentage of compliant responses remains relatively stable but for FM, it is the ambiguous responses that are constant.

Davidson and Fay (4) reported a repression of fantasy during the "latency" period and A. Freud (6) described the increased scientific and mechanical interests during this period. The high incidence of inanimate movement for the 8 year group supports their observations for a middle-class group of students. These responses declined sharply at 12 years, with the exception of 'water' responses which may have some special symbolic meaning associated with the increased 'Hostility and explosions' and 'Sociable-cooperative' responses. Machover (11), on the basis of a developmental study of figure drawings, reported that aggression "mounts into explosive fantasy about 11 and later into an acted out rebellion at puberty." Ames *et al* reported increased aggressive FM responses in the 9 and 10 year groups, and A. Freud observed increased hostility during puberty and adolescence. Support for these observations was found in the increased frequency of assertive responses at 12 years which included many hostile, aggressive activities. The absolute number of hostile, aggressive responses declined moderately at 16 years but, on a relative basis, the decline was appreciable. This difference from A. Freud's observations would need to be checked with other populations but it may be that the duration of hostile, aggressive behavior is shorter in a "normal" middle-class group than in her sample.

The increased 'Social-sexual' and 'Curiosity' activities indicate the maturing sexual interests and its representational mental content. 'Static' responses at 16 years, which are considerably greater than at 8 and 12 years both absolutely and relatively, may reflect the conflicts, uncertainties, and awkwardness of adolescents which are resolved by non-action rather than compliance.

Thetford (16) reported the most active M in his adolescent group whereas his 10 through 13 year group was constricted in a number of psychological processes. The most active M in this study was observed in the 12 year group and the only indication of constriction was the lowest number of R which, however, was not significantly different than the 8 year group. The narrower age ranges employed in this study and the homogeneous middle-class socio-economic status may be factors accounting for disparate results.

Summary and Conclusions

The purpose of this study was to test Piotrowski's hypothesis of increased compliant M responses resulting from the frustration and need to "adjust to more powerful and potentially dangerous persons." The Rorschach was administered to three groups of 8, 12, and 16 year old children, each group consisting of 10 male and 10 female students. Subjects were obtained from two New York City public schools in areas of approximately equal family incomes. On an absolute and relative basis, no evidence was found for an increase in compliant M responses and, therefore, within the age span tested, no support for Piotrowski's hypothesis.

The relative per cents of assertive, compliant and ambiguous responses for both M and FM were the same at 8 and 16 years. At 12 years there was a significant rise in assertive M responses which was largely of an hostile, aggressive nature. At 12 years 2 out of every 3 M and FM responses

were assertive whereas at 8 and 16 years only 1 out of 2 were assertive. Important characteristics of the specific content of all movement responses were the considerable 'Inanimate movement' at 8 years; increased assertive and hostile, aggressive movement at 12 years, along with increased 'Sociable-cooperative' activities; and increased 'Static,' 'Social-sexual,' and 'Curiosity' responses at 16 years. These findings support independent observations of scientific and mechanical interests in the "latency" period. During puberty assertion takes on an hostile, aggressive quality, only partially compensated by cooperative attitudes. In the 16 year group, sexual interests appeared and the increased 'Static' responses, among the adolescents, may be their way of handling the inner conflicts of this stage of development.

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Some Relationships Among Sexual Characteristics of Human Figure Drawings

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It is generally assumed that various sexual characteristics of human figure drawings on the Draw-A-Person Test indicate the subject's sexual identification. For example, a subject drawing male and female figures that show little or no sexual differentiation is assumed to be confused concerning his own sexual identification. Or, a man whose first drawn figure on the DAP is a female would probably be considered to be femininely identified. Since several aspects of drawings are used to determine a subject's sexual identification, it was felt desirable by the authors to investigate the relationships among some of the sexual characteristics considered important.

METHOD

The following sexual characteristics were investigated in this study: (1) sexual differentiation; (2) sex of the first drawn figure; (3) masculinity of the male figure and femininity of the female figure.

The Draw-a-Person Test was administered individually to 25 men and 25 women of various diagnoses at the time they applied for treatment at the University of Tennessee Psychological Service Center. The sex ascribed by the subject to the first-drawn figure was noted. Each pair of drawings was rated on a sexual differentiation scale. This scale has nine points and ranges from drawings in which there is no discernable differentiation between the sexual characteristics of the male and female at the "poor" end of the scale to drawings in which the male and female figures are well differentiated and portrayed at the "good" end of the scale. This scale is more fully described in a previous paper (3).

To determine the relative masculinity of the male figures and femininity of the female figures, the male figures and the female figures were rank-ordered by two independent judges. The judges arranged the drawings of the male figure in order from the most masculine male figure to the least masculine male figure. The judges arranged the female drawings in order from the most feminine female figure to the least feminine female figure. The reliability of the judge's rankings of the drawings was checked by rank-order correlating Judge 1's rankings with Judge 2's rankings. The mean reliability of the rankings was .63.

RESULTS AND DISCUSSION

Three of the relationships were significant at the .01 level of confidence. These results are presented in Table I. The woman who drew feminine female figures tended to differentiate well between the sexes, whereas women who drew masculine female figures tended to differentiate less well between the sexes. This correlation was $-.68$ and significant at the .01 level of confidence.

Men who drew the more masculine male figures tended to draw the more masculine female figures whereas men drawing less masculine male figures drew less masculine female figures. The correlation was $.50$, and significant at the .01 level of confidence.

The men and women were compared for the masculinity of the male figure and the femininity of the female figure. There was no significant difference between the men and women in the masculinity of the male figure, although the men tended to draw slightly more masculine male figures than the women. However, the wom-

TABLE I. Relationship between Sexual Characteristics of Drawings and Other Factors

<i>Factors</i>	<i>Statistics</i>
Women	
masculinity male figure vs. female figure.....	$\rho = -.03$
masculinity male figure vs. sexual differentiation.....	$\rho = -.20$
masculinity female figure vs. sexual differentiation.....	$\rho = -.68^*$
masculinity female figure vs. sex first drawn figure.....	$X^2 = 1.00$
sexual differentiation vs. sex first drawn figure.....	$r_{bis} = .08$
Men	
masculinity male figure vs. masculinity female figure.....	$\rho = .50^*$
masculinity male figure vs. sexual differentiation.....	$\rho = -.31$
masculinity female figure vs. sexual differentiation.....	$\rho = -.05$
masculinity male figure vs. sex first drawn figure.....	$X^2 = .00$
sexual differentiation vs. sex first drawn figure.....	$r_{bis} = -.08$
Men vs. Women	
masculinity male figure.....	$X^2 = 1.30$
femininity female figure.....	$X^2 = 8.16^*$
sex first drawn figure.....	$X^2 = .00$
sexual differentiation.....	$t = .10$

* Significant at .01 level.

en as a group drew female figures that were significantly more feminine than the female figures drawn by the men. The chi-square was 8.16 which is significant at the .01 level of confidence.

There was no significant difference between the tendency of the men or women to draw their own sex in the first figure. Eighteen (72%) of the men and 18 (72%) of the women drew their own sex first. The sex of the first drawn figure was not significantly related to any of the other sexual characteristics. This finding is in harmony with the findings of previous studies (1, 4) which suggest that the sex of the first-drawn figure is not related to other indices of masculinity or femininity.

There was no significant difference between the ability of the men or women to differentiate between the sexes in their drawings as this differentiation was determined by the differentiation rating scale.

In general, the findings could be summed up as indicating that women are better able to portray the female figure than men are, and can portray the male figure just about as accurately as men. This raises the question of why, then, don't women do significantly better in differentiating be-

tween the sexes so far as the sexual differentiation scale ratings are concerned. The answer to this question apparently lies in several statistics that are not significant at an acceptable level but that do show trends. Men tended to render male figures that were somewhat more masculine than the male figures drawn by the women, but not significantly so. Also the men who drew the more masculine male figures tended to differentiate better between the sexes in their drawings but not significantly. And finally, women did differentiate a little better between the sexes in their drawings but again not significantly so.

All of these conclusions should be tempered with some caution since the sample was relatively small and composed of subjects who had psychological problems serious enough to require treatment. And of 14 computed statistics, three could be significant by chance.

SUMMARY

The Draw-a-Person Test was given to 25 men and 25 women prior to entering psychotherapy. Sex of the first-drawn figure was noted, the drawings were rated on sexual differentiation, and the male and female drawings for each group were rank-ordered

on a masculinity-femininity continuum. The relationships among the above mentioned measures were determined. The following relationships were found to be significant at the .01 level of confidence: Men who drew masculine male figures tended to draw masculine female figures; women who drew the most feminine female figures tended to differentiate better between the sexes than the women who drew the less feminine female figures; the women's drawings of the female figure were significantly more feminine than the men's drawings of the female figure.

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Use of the Rorschach in the Diagnosis of Teacher Effectiveness¹

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It is now well known that personality is an important factor in the effectiveness of the teacher; and it is also well known that the Rorschach possesses potential for the study of personality. There is a voluminous quantity of ongoing research to find ways of diagnosing teacher effectiveness for the purpose of discovering a method or methods which can be used in teacher selection. But to date the results have been on the whole disappointing. Tests of knowledge and ability yield low correlation with any criterion of teaching effectiveness. Attitude inventories appear promising, but the results are inconsistent. Some exploration in the use of projective techniques has gone forward but the results, although suggestive, have not yet demonstrated their practical usefulness.

This study reports the possibilities of the Rorschach in predicting teacher effectiveness. The data consist of the Rorschach of nineteen teachers on whom the first author has extensive data based on interviews, observation of classroom practice, the Thematic Apperception Test, and information made available by supervisors and principals who have had an opportunity to observe the work of these teachers over an extended period. The Rorschachs were obtained by the first author with mechanical recording on the Audograph.

The Rorschachs have been scored and interpreted by the second author. The interpretations are contained in three sets of reports for each teacher: a report on the Rorschach psychogram, a sequence analysis, and a comprehensive report. In the latter, each point made and conclusion drawn is indexed to a separate report giving the Rorschach evidence on which each conclusion is based. This makes it possible not only to appraise the characteristics of each teacher from the Rorschach but to determine the Rorschach sign or signs which served as a basis for each characteristic.

The first step was to establish the correlation between estimates of teaching effectiveness based on the Rorschach and independent estimates based on acquaintance with each individual's teaching performance. On the basis of his extensive and intimate knowledge of the work of each teacher, the first author ranked them in order of teaching effectiveness according to his judgment. The second author did the same on the basis of her blind Rorschach interpretations. The correlation between these two sets of rankings was .60. Mrs. Dudek ranked them again a second time on the basis of her direct reading of the Rorschach protocols, this time yielding a correlation of .54 with the criterion. As a third check a third worker, Dr. Arthur R. Jensen, ranked the nineteen teachers on the basis of the Rorschach reports, having in addition the benefit of knowing the factors to look for in the Rorschachs which are indicative of teacher success (to be reported later in this paper) and these rankings correlated .54 with the criterion based on the rankings of the

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first author. This correlation would have been much higher if proper weights had been given to aggressive tendencies in one teacher.

These correlations are considerably higher than anything hitherto reported in the literature on factors predictive of teacher success. Flanagan (3) reported years ago a correlation of .51 between the National Teacher Examinations and the rating of teachers by supervisors. A later study (6) reports a correlation between the National Teacher Examination and judgments of faculty members on students likely to succeed in teaching of .48. But Delaney (2) in a doctoral dissertation reporting on the use of the National Teacher Examinations in Elizabeth, New Jersey, found a correlation of only .17 between the Common Examination of the National Teacher Examinations and a composite of the judgments of principals and supervisors on teaching effectiveness, and the highest correlation of any of the subtests—the optional examination in Elementary Education—with the criterion of supervisor's judgments was .27. In this study the National Teacher Examination added only .04 to the multiple correlation of .446 based on a combination of interview and an evaluation of training and experience.

An early study by Yaukey and Anderson (11) reported an average correlation of .26 between tests of professional fitness and teaching success as reported in several studies.

Recognizing the impropriety of drawing conclusions of general significance from a study of only nineteen teachers, an attempt was made to discover the factors in the Rorschach which made it possible to predict teaching effectiveness equivalent to a correlation of .60. Most studies using the Rorschach which have led to disappointing results have attempted to ascertain the value of the Rorschach by correlating individual signs. This time we started in with the Rorschach report—a personality

description—with the thought that if the factors in this report could be found to differentiate the better from the poorer teachers, it might be possible to work back to the Rorschach factors which served as a basis for the statements in the Rorschach report.

The top five and the bottom five teachers were selected on the basis of the criterion ranking, and the Rorschach reports of these individuals at the extremes of the distribution were studied with the intention of finding factors which were mentioned in the top five reports which were the opposite of factors in the bottom five reports. Four such factors were found. Four of the five better teachers showed *superior personality organization* as evidenced by such comments in the reports as "organizing ability more adequate," "organizational capacity superior," "a very good organizing capacity," and "a well-ordered person." Four of the five, poorer teachers showed *inferior personality organization* as evidenced by such statements as "basic ego organization is schizoid," "his thinking and planning are disorganized," "very poor organization of his energy," "such a pathological lack of organization in thinking that her thought processes verge on confusion."

A second factor that differentiates the top from the bottom groups is *judgment and reasoning*. Statements to the effect that "her reasoning and judgment appear to be good," "her judgment and reasoning are generally very good," "his judgment is almost never bad," "her thinking is efficient, her judgment superficial but good" appear in four of the five better teachers. Statements like "her judgment is poor and she is completely incapable of differentiating between important and inconsequential details," "extremely poor judgment and rigidity of thought processes" characterize two of the lower five individuals.

A third factor differentiating the two extreme groups is *capacity to re-*

late to others. This is somewhat different from warmth and not identical with the capacity to love others. Four of the five better teachers were characterized in this way by such statements as "she is interested in people and has a very good capacity to empathize with them," "she is genuinely sociable, lively, pleasant and capable of extensive emotional rapport with people," "she makes a good rapport with people," "she shows a ready, automatic, mechanical social responsiveness in the manner of a good hostess." Four of the five poorer teachers had poor capacity to relate to others as evidenced by such statements as "there is no evidence of any capacity for warmth or affection," "there is very little awareness of, or interest in, people as persons," "her capacity to make emotional rapport with people is very poor," "she has no capacity to relate to people and has little need for emotional relationships with people."

Finally, the two extreme groups could be differentiated on the basis of *aggression*. Two individuals in the better group either had less aggression to express or they had their aggressive tendencies under better control as evidenced by such statements as "there is very little evidence of aggression or hostility," "she harbors little secret hostility or spite." The absence of a trait is easy to escape detection which perhaps accounts for the failure to comment on the absence of aggressive traits more fully in the superior teachers. But aggression was a significant factor in four of the five poorer teachers as evidenced by such statements as "his inability to accept or handle strong and largely repressed aggressive, destructive impulses," "her main area of difficulty resides in hostile, aggressive impulses," "the Rorschach gives a picture of a highly excitable, aggressive, energetic person," "her hostility and aggression is so great that it makes her too restless to be with people for more than a brief period of time." In the case of these

poorer teachers, the hyperaggressiveness may express itself in different ways; in some cases by uncontrolled impulsive behavior and in others by extreme reactivity and reaction formation.

A statistical test of the significance of the differences reported for the above four factors reveals that two of them—*organization* and *empathy*—fall at the .05 level of significance, while *judgment* and *reasoning* and *aggression* may be expected to show opposite occurrences at the extremes of a group of teachers as frequently as reported in this study as a matter of chance with a probability of .17 which is somewhat higher than is commonly accepted as convincing that the differences could be not attributed to chance. According to current statistical thinking, the first two of these factors have been convincingly demonstrated to differentiate better from poorer teachers and no further test of their significance is necessary. The significance of the other two factors is hypothetical only and further tests would be necessary before it could be said with any certainty that they differentiate between better and poorer teachers. These estimates of probability were made with the help of "Probability Tables for Item Analysis by Means of Sequential Sampling" prepared by H. M. Walker and Sidney Cohen.¹ It was thought by these statisticians that if one found differences that fell below the .05 level, one would continue to add cases and make repeated tests in a process of sequential sampling until it became clear that the differences would or would not fall beyond the required .05 level. This would be appropriate only if one could draw on unselected items or individuals. But the individuals in this study yet to be included in this test would have to be drawn from those nearer the middle rank and presumably the chances of their showing trends in the desired direction would

¹ Bureau of Publications, Teachers College, Columbia University, 1949.

become less and less. Kelley (5) many years ago showed that 27% was the optimum cutting point in a distribution for determining the differences of the tails of the distribution with the optimum confidence. With fewer than 27% the smaller N lowers the confidence even though the differences may become larger, and more than 27% decreases the differences even though N becomes larger. Five out of nineteen is close to the 27% for these data.

Other factors were investigated but nothing of a clear-cut nature could be discerned. Three of the poorer teachers showed marked depressive trends, but these same trends might also have been present without being labeled as such in the better teachers. Some of the poorer teachers showed strong anxiety and feelings of inferiority, but this also was true of some of the better teachers. High intelligence characterized some individuals in both groups. The better teachers showed drive, energy, and ambition, but so did some of the poorer group. Some members of both groups had exhibitionistic tendencies and were compulsive. It appeared at first that the poorer teachers tended to be introverted, but this could not be said of all, and the same held true of the better teachers. Individuals in both groups showed good and poor control, were active or passive.

To summarize, out of a large number of personality variables, only four seemed to differentiate the better from the poorer teachers: 1) personality organization, 2) judgment and reasoning, 3) ability to relate to others, 4) amount of aggression. But it should be emphasized again that no definitive conclusions can be reached on the basis of nineteen teachers.

However, there are indications that these factors may have greater validity than might be supposed from the tenuousness of these data. In another study as yet unpublished from quite different data (10) the author reached the conclusion that effective teachers

could be distinguished from less effective teachers by three factors: 1) liking children, 2) inner strength, and 3) personality organization. These three factors are remarkably similar to the three factors in the present study. Personality organization is identical in the two studies. "Liking for children" bears a close resemblance to "being able to relate to people." It is probably that being able to relate is the more fundamental and that the matter of liking per se is not the prime issue. Christine Olden (7, pp. 111-126) in an insightful article on "Adult Empathy with Children" says "Mature empathy, educationally useful, is independent of love for the object. Moreover, love may even hamper useful empathy as it does free-floating attention. This is one of the many reasons why empathy of parents with their own children is more complicated and difficult to achieve than with other children. You can have empathy with a child whom you love, but you do not empathize with a child because you love him." (7, p. 118).

The factor of inner strength is closely related to the factor of aggression in the present study. In my earlier study, I surmised that the essence of inner strength was the capacity to manage and direct one's aggression constructively and the present study gives strength to that assumption. In addition, the matter of empathy and aggression are probably related. In the article above referred to, Olden says "Empathy is temporarily blocked by the adult's aggression toward children in its many forms. . . Aggression blocks empathy even when the aggression is directed, not against the possible object of empathy, but against someone else, even someone not present." (7, p. 119).

Ryan's factor analyses of teachers were not designed to get at qualities of teacher effectiveness, but more simply at clusters of factors that come out of classroom observation of teachers. However, his first factor which describes the teacher "who shows a lik-

ing and an affection for pupils" can be compared with the third factor in the present study "capacity to relate to others." Ryans' factor 2, "systematic in procedure and responsible in behavior" is distinctly related to "good organizing capacity" in the present study. Ryans' third factor of animation and initiative was not found to be a differentiating factor in the present study (8, 9, 4).

Another study by Coffman (1) has recently come to our attention that adds additional corroboration to these conclusions. This investigator inter-correlated college students ratings of their instructors on seventeen rating scales and from a factor analysis concluded that the correlations could have been determined by four independent factors: a) empathy, b) organization, c) punctuality, neatness, etc., d) verbal fluency. The first two of these factors also appear in the present study. There seems to be evidence that the conclusions reached from the analysis of the Rorschach interpretations of these nineteen teachers is not something that is a matter of chance occurrence, but that corroborative evidence from other studies gives the present study considerable validity.

Since the Rorschach reports supplied the Rorschach evidence for each statement made, an effort was made to trace back these four factors which differentiated the better from the poorer teachers to the signs that led to these conclusions in the Rorschach. These results were somewhat confusing simply because the same conclusion—for instance, better organizing ability—was reached from different evidence in the Rorschach for different individuals. This probably accounts for the fact that in scores of studies correlations of Rorschach signs with other variables have seldom if ever led to positive results (12).

For example, roughly the best single Rorschach criterion of "good organizing ability" was a large number of good W's and also well elaborated M's. However, the correlation of num-

ber of W's with the criterion ranking of teaching efficiency made by the first author was only +.26. The following signs were used as a basis for drawing the conclusion of better organizing capacity in four of the five better teachers: "perceptions articulate—can elaborate picture in detail—can account for all parts of the blot," "articulate, spontaneous, very high W," "high W%—when he is able to see a W he can account for every part without being asked to—able to take blot and fit all the parts together—even though the response is not too good," "tendency to be articulate—able to take blot and fit all the parts together." Of four of the five poorer teachers, some had a high number of W's without showing "high organizing ability." For instance, one individual with 143 R had 16 W but his responses showed "disorderly sequence with much repetition." Another individual had 10 W but only 2 D. His Rorschach showed "much impulsivity with little capacity to round out his W's and he had no concrete, practical sense." A third had only 1 W and many dd so that she "doesn't know the important part of anything." The fourth individual had "poor form and vague concepts so that she was confused about what she saw."

Decision as to "judgment and reasoning" are more closely tied to a single Rorschach factor—high F+—than any other characteristic examined. But other Rorschach signs such as high W, good sequence and a large number of P's also contribute to this factor. Of the better teachers, high judgment and reasoning were based on "good W, good F+%, well elaborated M"; "good form-level, good W, good sequence." But of the two poorer teachers, one is said to have poor judgment because of "dd and only 1 M." While another has "extremely poor judgment" because of "very poor form, tendency to be over specific in concepts which are vague, no initial delay in colored cards."

With regard to the capacity to relate to others, the one Rorschach criterion most frequently referred to was M. However, it was not merely the number of M's but also their quality, and other Rorschach factors contributed also—notably color and shading. (The correlation of the criterion—with M was $+.33$, with $\Sigma C +.10$ and with $\Sigma(c+K)$ was $-.04$). For example, of one of the better teachers who showed good capacity to relate, it was said "many M's and good M's. They are real human beings and she shows variety and capacity to change the roles. There is lots of color and good Fc in card VI. The responses are not stereotyped, and there is a desire to communicate and to show off." Of another it was said, "good M and a constructive M on III (two women working over a kettle). Emotional capacity not too good—lots of color, outgoing red—extroverted—afraid of people. Shows sensitivity (Fc)." Of another it is said, "not so many M's but much color—very extroverted—much outgoingness—tries to put self across. Color (which has to go somewhere) goes into her teaching. She shows a need to go out to people."

Then of the poorer teachers who are unable to relate to others, the second author says from the Rorschach record "too much K—overwhelmed by inadequacy—couldn't possibly relate well—flooded by anxiety—distorts his relations with others because he is so uncomfortable with himself—quality of M in III and VII artificial and with derogatory connotations." Of the Rorschach of another of the poorer teachers, the second author says "M is minus. In III, M is one person, not two persons in a relationship. Even the animals in VII are stuffed and mounted. There is intensity and impulsivity of color. No FC or Fc. H% is very low."

With regard to aggression in the Rorschach, the second author draws heavily on content and the quality of M and C in the record. Of one of the better teachers, the second author

says, "no aggressive FM or discordant M; no violent color, yet he gives an unpleasant spider and web response in X with unpleasant elaborations of the concept. Afraid of aggression from other people—he has aggression but it doesn't come out." or of another better teacher, the second author says, "No aggressive content, no negative color, very controlled mechanized M—masochistic tendencies."

But the aggression in the records of the poorer teachers is described as follows: "Indirect aggressive content such as claws, pincers, jet plane, pliers, as well as directly aggressive content such as guns, atomic bomb explosion, combined with high F+%, shallow color, very high shading, suggesting suppressed controlled aggression." Or again, "Aggression hinted at in M of first two cards (Card I reminds of Sohrab and Rustum—the latter kills the former, his son; Card II looks like people dancing—they don't look like Indians—it wouldn't really be a war dance, but it might have some religious significance) and vehemently denied in III through an over-emphasis of the cooperative element of the M. Dragons breathing fire in IX become picture objects of the Walt Disney type, robbed of real vital quality. Aggression indicated by many responses over-emphasizing sweetness." "M in III very aggressive (fire coming out of man's mouth); fireworks in IX is explosion."

These illustrations are given to demonstrate that the significance in the Rorschach cannot be found by a mere counting of signs, but by an attempt to interpret the character of the responses both from their formal qualities and the nature of their content.

SPECIAL STUDY OF DISCREPANCIES

It is possible to study the data further to discover the basis for the discrepancy between the rankings of the first and second author.

The largest discrepancy was of a teacher whom the second author put

in fourth place on the basis of the Rorschach and whom the first author put in seventeenth place on the basis of first-hand contact and observation. This teacher who formerly taught in high school was relieved of her position because the pupils "ran away with her." She is now a counselor in a junior high school and does well when she sees one pupil at a time. She is a cultured person, widely read and interested in music and art. The Rorschach presents her as an intellectual and ideational person, cooperative, pleasant and capable of being outgoing and spontaneous and it was from this picture that the second author undoubtedly gave the high ranking. The Rorschach also states that her main area of disturbance is her aggression and hostility which seems to have been successfully repressed through reaction formation and denial. We have here, then, a person who has many of the qualities that go to make up a good teacher, but who failed as a classroom teacher because she was unable to show the necessary assertiveness and firmness required to deal with a classroom of pupils.

On the opposite side is a teacher whom the second author on the basis of the Rorschach put in eleventh place, while the first author on the basis of case data put her in third place. This teacher has a good reputation in her school as being a forceful, energetic teacher who establishes good relations with her pupils and achieves good results with them. The Rorschach report speaks of pervasive hostility and acute anxiety. The attempt to deal with the hostility has led to a masochistic character. On such facts the second author based her ranking. But the Rorschach also says she is interested in people and has good capacity to empathize with them. Her use of aggressive energy is what keeps her going and its use is constructive as far as society is concerned. Her exhibitionism appears to be fairly well-controlled and used construc-

tively to endow her teaching with a dynamic, lively quality. In short, although hostility and anxiety are revealed by the Rorschach which was the basis for giving her a ranking in the middle position, the constructive use of her aggressive and exhibitionistic tendencies helped to make her effective as a teacher.

In a third case, the second author on the basis of the Rorschach gave a ranking of fifteen while the first author from the case data gave a ranking of seven. This mother of four children was teaching a second grade class with considerable success in an energetic fashion. The Rorschach report describes her as a lively, hysterical woman with typical "effort" syndrome in terms of a compulsive drive to activity and sociability. But there are deep feelings of inadequacy and inferiority and anxiety is pervasive and chronic. It is on the basis of such factors that she was given a low ranking by the second author. In addition, the Rorschach report speaks of an "effective persona of an active dynamic woman who has more energy than the average person and should be admired for it." Her interest in controlling and manipulating her environment is abnormally high. Her aggression is for the most part constructively used. This picture of the person coincide with the one that served as the basis for the judgment of the first author.

It is evident from these three cases of discrepancy between the two sets of rankings that the trouble is not with the Rorschach which presents a faithful picture of the many sided aspects of personality, but of knowing which of the aspects are crucial in determining the kind of teacher a person will be. It is quite possible that the first author erred to some extent in his judgment by overvaluing traits of assertiveness while undervaluing some of the qualities that make for effective teaching in the less assertive and less demonstrative person. The second author, on the other

hand, based decisions on the general goodness of a person and freedom from neuroticism and did not fully take into account the devastating effects of aggressive hostility, whether under- or overcontrolled on successful teaching. A person who both knows the Rorschach and also the qualities that make for successful teaching should undoubtedly be able to predict teaching success corresponding to a correlation of well over .60.

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The Use of Pigem's Test with Children

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In 1949 the Barcelona psychiatrist, José M. Pigem, published his Wishing Test, called "Prueba de la expresión desiderativa" (5). When I got acquainted with it, I was struck by its originality and I felt that I might make a trial with it in my child psychiatric practice. Soon I learned that it was of enormous value in the examination of children and as I noticed that even many important Spanish contributions to science were scarcely accessible to workers in other language territories, I read a paper on this subject for the Association of Austrian Neurologists and Psychiatrists (4). Then I came into contact with Henry P. David, who developed a similar "Projective Question" (3). Supposing that it might be of interest to Anglo-American workers to take note of Pigem's work, I decided to record my latest experiences with the test of the Wishing Expression, in the form I had come to use in the practice with children.

The starting point of Pigem's study was the recognition that any person may be characterized by assigning to him the traits of some animal. Aristotle had ascribed typical characteristics to many animals in his "History of the Animals," which have been taken over to describe people in everyday language. In every idiom there are expressions such as "as gentle as a lamb," "as brave as a lion," etc. The use of an adjective may even be superfluous, as it is possible to characterize somebody merely by comparing him with an animal. We understand clearly what is meant by the characteristics of hares, snakes, donkeys, dogs, and so on. Do we indeed get a clear conception? We come to know that the same animal

is suitable for quite different characterizations. A person can be as true as a dog, another person can be as mean as the same animal. The pig is a symbol for laziness, but for dirtiness too. I will come back to this point.

If we examine the foregoing list more closely, we notice that the characterizations have not all come about in the same way. It is a well-known fact that man considers himself to be far superior to the animals. If a person is said to behave "like an animal," this generalization does not refer to an outstanding quality. There is a long list of characterizations which are derived from the preconceived idea that animals lack intelligence, as witness the expressions: "as stupid as an ass," "as a sheep," or even "as an owl" (the classic symbol of wisdom!).

The characterizations mentioned have no reference whatever to special qualities of the particular animals; they are drawn from our conception of animals in general. But there are other characterizations which are based on a specific quality of the animal in question. This can be an outward feature, which then becomes a symbol for a psychological characteristic. Examples of this are "as thick-skinned as an elephant," "as smooth as an eel," "a butterfly mentality." This way of characterizing is yet more striking if we take inanimate objects to designate people, e.g., "as hard as a stone," "as stiff as a broom."

Quite another type of characterization originates from the idea that animals possess psychological traits. Originally it is the animal which — mostly in fairy tales — possesses human features: the cruel wolf, the sly

fox, the proud peacock. So far as man in his turn may be compared with an animal another group of characteristics comes into existence: "as false as a cat," "as meek as a lamb." Even inanimate objects can serve as a model for this kind of characteristic. A Dutchman can be "as honest as gold," whereas an American can be "as true as steel."

Now I pass on to Pigem's "Prueba de la expresión desiderativa." It is straightforward, short and simple. It might even be considered a parlor game, but in reality it is a most valuable projective test, as it induces the tested person to reveal himself. As a matter of course the atmosphere in which the test is carried out must be easy; there must be a genial relationship based on confidence. It is best for the examiner to include the test in the conversation so that it becomes part of the psychiatric interview. I, myself, usually proceed in such a way that in the course of the conversation I say at a suitable moment (to adolescent and adult persons): "Now I would like to ask you something rather queer, about which you have probably never thought before. Anyhow I suppose that you will be able to give a satisfactory answer. Just try!" And then follows Pigem's test. Needless to say that the tone in which the test is carried out is all-important, especially with children.

The test consists of two questions, the first of which reads (literal translation from the Spanish) "What would you like to be, if you had to return to this world and you could not be a person? You may be whatever you like. Choose from everything that exists. What would you like to be?"

When I started to use Pigem's question in my work with children I felt that I needed another formula, which might suit more with the child's attitude of mind. I invented the following version: "*Imagine that a magician — you know what that is? (if necessary I give an explanation) —*

comes to you and wants to turn you into something and you are allowed to say what you would like to be, what would you say? You could choose anything there is!" In the beginning I used to add: "except boy and man, girl and woman." But once having forgotten to finish my instruction in this way, I had the experience that the omission of above-mentioned restrictions gave more and even indispensable data.

Children are, as I came to notice, often inclined to name a special kind of adult, e.g., an Indian or even a member of a particular profession. Children often take the question as an inquiry into their choice of career. For this reason I changed over to the systematic omission of the restrictive explanations. But, if the child chose some human being, I proceeded: "*It is very nice, that you made your choice, but now I see that I have forgotten something very important. The magician I told you of cannot make persons. That means, that you cannot choose a boy nor a man, a girl nor a woman!*" Whether the child is able to make a new choice or not, I conclude: "*Now you must imagine that the magician cannot turn you into the thing you wanted to be. Then he says to you: I am sorry, but that is not possible. I must turn you into something else, but I promise you, that I am not going to turn you into something you do not like. So tell me, what would you never like to be?*" In this manner I obtain in the majority of cases two wishes (or even more), so to say a positive wish and a negative one. I will explain the importance of this fact later on.

When I met Pigem in Barcelona, I told him of my version and he then told me that he himself sometimes used another version with adults, namely: "*Imagine that you are dead, standing before the gate of Heaven ready to enter, and that Saint Peter says to you that unfortunately he has no more places and that he must send you back to earth for a while, but not*

in human shape. What would you like to be then?" It is obvious that this form in our Protestant country could hardly be applied to the adult subjects. But that is not of importance. The principle is clear: the form of the question must suit the nature of the tested subjects, who must be induced to make a choice that will bring their inner desires to light.

I now return to the fact that one animal can illustrate different characteristics. In recognition of this, Pigem added another question to the one that produces the subject's *Wish Symbol* ("Símbolo desiderativo"). The wish must be explained, to this end Pigem put the following question: "Imagine that I have never seen what you choose and that I know nothing about it. Just describe to me what it is like." Then the subject produces his *Wish Expression* ("Expresión desiderativa").

Again, according to my own experience, one does not get very much further with children in this way. It has proved to be much better to ask them point blank: "*Now tell me, why would you like to be that?*" and "*Why would it be so unpleasant to be that?*" In by far the majority of cases the examiner gets a satisfactory answer. Moreover, in case this method would fail, it still is possible to follow with Pigem's original second question.

I believe it would be advisable to illustrate the foregoing with some examples. An animal which is very often chosen is the dog, the domestic animal beyond compare, with which man can identify himself very easily. The dog is certainly a good friend of man, so that the saying of Montaigne has been preserved: "*Plus que je connais l'homme, plus que j'aime mon chien*" ("The more I get to know man, the more I love my dog"). Here are a few examples in which the dog is the subject's wish symbol. A young happily married woman explained her choice: "Be-

cause a dog is a sociable animal." This is quite another explanation than I got from a neurotic patient, an engineer in his thirties, whose vanity had been hurt by his discovery that his intelligence, which he himself had always rated very high, was not adequate to continue his research work. He gave the following explanation: "I chose the dog because he never makes use of his intelligence when he goes to work. I must learn to abandon my attempt of discovering everything. I must perform my task stupidly just like a dog does." Another patient, a 17-year-old youth, with delayed adolescence and inclined to homosexuality, who suffered a great deal from his unsatisfied needs for an emotional attachment, chose a dog, because it was "a domestic animal highly thought of by people." A 12-year-old boy, who committed neurotic thefts in order to invite the attention of his parents who only lived for business, explained his choice as follows: "Because a dog comes and sits by one when one is alone, because as a dog one is among people." It is obvious that all neurotics projected their deepest conflicts into the same wish symbol which had a different meaning for each of them. I still give the example of a fidgety, restless neuropathic eight-year-old boy who gives his answers as quickly as lightning, just as he appears in all his reactions. He chose a dog, whereas he refused to be turned into a sheep or a church-tower, both symbols being named in the same breath. The choice of a dog was explained by his definition: "He *runs* after the pussies." That it really was movement that fascinated him, could be inferred from the explanation of his "negative" choice: "The sheep *walks* the whole day in the field," "The church-tower usually remains *standing* several years." It is to be seen that even the field is not large enough to satisfy this boy's urge of expansion.

The last case supplied two Wishing Symbols. Often the subject chooses

two or more forms of transformation. It then becomes necessary to seek out the common factor: the common denominator so to speak. This makes the examiner's task easier. The danger of misinterpretation lessens considerably. Pigem himself gave the example of a man, who in one breath mentioned: "Cow, dog, lamb." It is conceivable that all three wishes symbolized something soft and good. One of my adult patients, a 40-year-old official, a real careerist, disappointed by his few chances of promotion, mentioned consecutively: "Boulder, lion," which revealed that both symbols stood for prestige.¹

Some people behave in the test situation like "nihilists": they do not know what to say they would like to be. The opposite question may be useful, because these people sometimes definitely know what they would *not* like to be. One of my female adult patients could say no more than: "On no condition a piece of furniture," which was for her "an inanimate object, in which no one has any interest." In such a case it is possible to draw a conclusion from the negative wish. It was for this reason that I changed my original version along these lines: I tried to find out the subject's dislike in every case. The wish and its opposite complete and reinforce each other. Whenever the wish fails to come, or does not reveal an obvious striving, the subject's dislike may give the clarification needed.

It appears that Pigem's questions stir up a very personal problem, because they are directed at a very personal choice. The animal, the plant or the object which is chosen by the patient must have a very particular significance for him, as a great deal depends on his possibility of identifying himself with the chosen object. The identification only comes into being, if the object chosen possesses

a certain quality for that particular person. The quality derives its origin from the personal problem of the patient. But this can never undo the fact that by far the majority of symbols chosen have a conventional meaning of general validity, even if this recedes into the background when the choice is made. In the very beginning I mentioned some conventional symbols. A dog is always a domestic animal, the lion is for ever the king of animals. Just for this last reason the disappointed official could name in one breath lion and boulder, both provided adequate expression of his desire for prestige.

One sees this most often with children. For them the bird signifies the desired independence, the fish symbolizes freedom, the horse expresses domestic utility. The child is already acquainted with these symbols. But it often happens that the choice is provoked by an aspect of the object chosen which lies outside its conventional symbolism. I will give some obvious examples from my child psychiatric practice.

An 11 year old boy of average ability was brought to my consultation room because he had on several occasions taken money from home. The last amounts had been very considerable sums. The parents were upset, their discipline having been strict enough. The boy had been immune to every punishment. He could not resist any impulse. The examination showed that the boy must be considered to be a constitutional psychopath, who was completely ruled by his passions and whose Superego was insufficient. It may be assumed that his parents had threatened him many a time with confinement. Now for the result of Pigem's test.

The boy chose a fish, an animal which swims in the water and is eaten when it has been caught. When I asked him, *why* he would like to be a fish, he answered without any hesitation: "*In order to remain outside the net.*" In this explanation was reflected the personal problem of the boy. For all children, the fish is, in general, an example of freedom: he

¹ In the Dutch language there exists the word-picture: "A boulder-like man," which means a man who rises high above the others.

swims around in the wide ocean. In the case of this patient, however, the fish was above all an animal that can be caught in a net, which must therefore be careful that he is not caught. It was just this aspect that gave the wish expression a very special personal stamp.

Another example concerns a 13-year-old boy.

This boy, who lived with his aunt and uncle in Holland, because his mother and step-father had returned to Indonesia, was referred to me because of his excessive and open masturbation. His behavior was overbearing. All his reactions, his daring and cheek, his misconduct in the classroom, the masturbation included, gave expression to his feeling of loneliness. As he had difficulties in making friends he was forced to arrest the attention of the others. I diagnosed a neurotic adolescent development.

The answer to Pigem's question was very remarkable, as the conventional meaning of the symbol chosen, a horse, was emphatically rejected. Generally the utility of the horse is stressed, either as a working-horse or as a riding horse. The explanation given by this patient was completely different. He elucidated: "In former times, when they still ran wild, they lived all together, those horses!" It may be seen, that he emphasized the difference between the happy former times and the present loneliness. Here it was that his problem had to be sought.

In my first study on Pigem's test I gave two examples of children who chose a "pussy." One of them I want to describe here too, because it is interesting in more than one respect.

A 14 year old boy came to me because he had sent a pornographic letter to an older lad of his neighborhood who had recently become engaged. From the examination it appeared that the patient had nursed a secret devotion for the older lad (with whom he was never even friendly) based on his latent homoeroticism, so that the engagement of the other was to him equivalent to being jilted. He was strikingly weak and effeminate, but beneath the gentle outward appearance, his aggression was blazing. His behavior became clearer

when I had got to know his home conditions. His mother reported that her son's favorite occupation was doing the housework: he washed the crockery, cleaned the rooms, polished the furniture and would miss school, because he preferred to do household duties. He still played with dolls and would only urinate in a sitting position. He could not endure his father. The latter was a rough artisan who felt very hostile about the effeminacy of his son. He was a coarse fellow who often beat the boy, with the result the latter frequently had to hide himself at home. Hence his shy, repressed and furtive behavior.

This boy chose a "pussy," elucidated by the wishing expression: "because one never is beaten like a dog!" He feels, in fact, like a domestic animal and moreover like a beaten dog. But he wants to be an aggressive cat which nobody would dare to beat. That means, he wants his aggressivity to deter the adults from attacking him. But now we see something very remarkable. When we go into the conception the "pussy" represents, we notice that "aggressivity" and "pussy" have divergent meanings. To express what he really aimed at, the boy should have said "cat" instead of "pussy." But in fact he is a pussy, i.e., a being that keeps his aggressivity secret. The real problem of the boy, his ambivalent attitude, is perfectly shown by the answers on Pigem's questions.

This leads us to the problem: What exactly do we determine with the help of Pigem's test? Does it bring into the open what is conscious in the subject or does it reveal for us his unconscious impulses? Does it describe the actual situation or does it exhibit the subject's repressed wishes?

It is an established fact that the simple question gives us the opportunity to discover something about the patient which he will have held back during the interview. The test of Pigem is a real Projective Test. It presents us with the fundamental strivings of the subject, which may already be in a state of repression. The engineer who chose to be a "stupid"

dog felt indeed that he had hitherto overrated himself, but he did not allow himself to be aware of this every day. His choice expressed his striving to accept himself as a mediocre man. The official who, an ambitious climber, saw his way barred, was, it is true, also aware his conflict arose from the fact that he was not able to keep up with his own double-quick time; in spite of this he did not impress this upon himself uninterruptedly. His choice expressed his striving for consideration.

I have purposely repeated these two examples. What they both have in common is that both patients in the moment of their choice really *are* the object of their wish. A complete transformation has taken place: the engineer *is* the dog without reason, regarded, perhaps, by his environment as intelligent, but notwithstanding that, a beast without a brain. The official *is* the boulder or the lion, even if not everybody realizes it. These examples differ from each other in one major point. The engineer confirms the inference which he has drawn from his disappointment. He has lost his self-confidence: if only he was a dog who does everything stupidly off-hand. He gives what Pigem calls an answer "*de reafirmación*." He impresses upon himself the fact that he is actually only a stupid dog. In this way he projects the damage done to his vanity.

How differently the official reacts to his downfall. He comforts himself with the day-dream that he is a lion, although, as yet, not an acknowledged one. His answer compensates the offence he has experienced. It is an answer "*de compensación*."

The 14-year-old boy *is* in the moment of his choice the pussy, i.e. the disguised cat. He reveals by his answer his repressed aggressivity. In his behavior he is really a gentle pussy that does no harm whatever. But in the back of his mind he wants to counter-attack his enemies. His choice reveals his need of security as well as the

necessity for hiding his true feelings.

His answer can yet be viewed from a different angle. Pigem distinguished between male and female symbols. Among the former he included the lion and the eagle, whereas flowers could be considered as female wish symbols. If the specific sex-bound symbols are chosen by the opposite sex, this means the prevalence of those opposite sexual tendencies. It may be obvious that the symbol "pussy" is a female symbol. Thus it might as well indicate a tendency to a homosexual attitude.

It may be seen that the symbols and the wish expressions belonging to them must be studied accurately, because fine distinctions, as I mentioned above, are of great significance in the test.

Pigem's test gives us the projection of an attitude toward life in respect of actual conflicts. The fundamental needs are various, the need for security, love, recognition, self-realization. Very often the Pigem test unveils the problem of human loneliness by the means of wish symbols such as dog, cat, horse, etc. As I have already pointed out, we must always take into consideration that these symbols express something quite different from the need for an emotional relationship. When these symbols are given by well integrated, not neurotic people, they can represent again something different, viz. that man in general can feel an affinity most with the animals mentioned, which, in a certain measure, belong to his friends. The course of things is as follows. The subject would prefer to come back to the earth as a human being—the children often wish to remain what they are—, but because this possibility is denied, there is no other possibility than that of choosing an animal, which lends itself to identification. The wish symbol then may be compared to the popular interpretations of the Rorschach Test. They do not have a deeper significance.

Occasionally the test produces very

original answers. One can get them even from children. It is extremely easy for the child to project himself into a world other than that of humans. He has hardly outgrown in thought the world of anthropomorphism. The fairy tale in which humans are turned into animals and the animals into human beings has a very strong attraction. The idea of the magician looking only for work contains nothing disquieting. The problem given is a game for the child which delights him. He is ready to make great efforts to find a suitable object. I can say that it is exceptional to meet a child who is unable to provide a solution. He will not, as is often the case with adults, be hindered by paranoid thoughts or hysterical inhibitions. Children who are of low intelligence or mentally defective are naturally less successful in just the same way as their adult counterparts. It is a well-known fact that children are sometimes more quick at repartee than grown-ups. We speak, in fact, of the "enfant terrible." Sometimes I got the amusing answer: "A magician so that I myself can bewitch the one who wanted to change me!"

But the most original symbol I ever heard was an unasked one. It was told me by a mother who herself knew nothing about Pigem's Test.

A mother of a 6-year-old boy visited me, because her son used to tease her by continually hiding things his mother would miss. The environmental situation is full of problems. The father left the family many months ago and the mother has taken her youngest son as his father's substitute. The bringing-up bears the mark of her erotic needs. The boy has the obsession that he must see his mother naked: "Tonight it must be!" He gives her spontaneously a wish symbol: "I would like to be a pair of drawers with eyes. Then I could ever watch you." Another time he wants to be "the seat of a W.C. to be able to see your buttocks." (In the Dutch language the word for "seat of the W.C." *bril* is a homonym for "spectacles"!)

It is remarkable that Pigem's Test did not reveal the above-mentioned

fervid wish. The answers I got to my questions were: "I would like to be a dog," "he can run and play nicely in the sea." One may draw the conclusion, that the force of repression is stronger than the provocation from Pigem's Test. But these answers might also be interpreted by the supposition that the fundamental problems of the boy do not concern sexuality and that the sexual wishes must be considered as efforts to monopolize the attention of the mother. There exists an interplay between mother and child such that the mother provokes an erotic relation to which the child reacts with intensification of his dependence and infantile behavior. It is this last aspect which is shown by the controlled Pigem Test.

One of the greatest difficulties in interpreting the answers to the Pigem Test relates to the necessity for finding out the child's own meaning for the symbol. On the one hand the examiner is prone to the error of interpreting along his own, adult, lines. On the other hand, there is the possibility that the adult admits particular infantile meanings, which in reality may not exist. The symbols and wish expressions must be studied minutely, but no distinctions may be made which might be far-fetched.

Whoever would think that Pigem's Test is a sort of party game, quite unworthy of our serious techniques, should remember that the borderlines between test and observation become blurred in so far as the test becomes part of the whole examination: the observation of the child's natural behavior. Where is the child more at home than in his own particular play world? Whoever wishes to examine the child, must find him there. The Pigem Test has the undeniable advantage of fitting in an unforced manner into the make-believe atmosphere of the child and of having him project in a playful manner.

SUMMARY

The author discusses Pigem's Wish-

ing Test as it may be used with children. In its original form it consists of two questions, the first of which, producing the wish symbol, runs as follows: "What would you like to be if you had to return to this world and you could not be a person? You may be whatever you like. Choose from everything that exists. What would you like to be?" The subject's answer should be followed by his own explanation of the chosen symbol by means of the answer to the second question: "Just imagine that I have never seen what you chose and that I know nothing about it. Describe to me what it is like." In the work with children the author uses another question, more suitable to the fairy-tale world of the child. He found also that it was advantageous to provoke a "negative" wish. The author points

out that the test, simple and short as it may be, must be considered as a projective test. The author illustrates this by means of several examples.

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Received May 8, 1955

BOOK REVIEW

A. Morali-Daninos and N. Canivet. *Le Test "Z". Manuel d'Application.* (The technique of the Z-test. A test manual). Paris, 1955, Editions du Centre de Psychologie Appliquée. 122 pp.

This monograph consists of a description of Zulliger's Z-test, a group-administered projective test which was devised during the last war for rapid screening of Swiss army personnel. It consists of 3 plates similar to the Rorschach plates, which are projected in succession on a screen. The subjects are required to write down their responses. In scoring and interpretation of these responses Zulliger followed closely the conventional Rorschach. (The Z test is not to be confused with the 20 plate Behn-Rorschach test [Bero-test] published in 1941 by Zulliger, but devised earlier by Hans Behn-Eschenburg to parallel the Rorschach.)

After a brief historical introduction the scoring is discussed at some

length. The authors propose the following modifications of Zulliger's scoring categories on the basis of their study of over a thousand French protocols: a new list of large detail responses, a new list of popular responses, a redefinition of shading responses including a reaction to black massive detail ("Clob") and a ratio of number of movement responses to number of shading responses to supplement the conventional experience balance ratio. A 55-page list of responses to each of the three cards, alphabetized within the main content determinants, gives the form accuracy, color, shading and movement responses, etc. This compilation is based on 12,000 responses collected by the authors. The monograph closes with two protocols which are scored and interpreted by way of illustration.

STEVEN G. VANDENBERG
Institute of Human Biology
University of Michigan

GENERAL NEWSLETTER

Quintela, Gloria F. Psicodiagnostico de Rorschach. *Arquivos Brasileiros de Psicotecnica*, 1955, 7 (No. 3), 47-55.

Part three of a series of normative Rorschach studies on male and female adults in Brazil.

Pertejo, J. La interpretacion del Psicodiagnostico de Rorschach y los dibujos infantiles segun F. Minkowska: Su obra. *Revista de Psicologia general y aplicada*, 1955, 10, 25-47.

A summary of Minkowska's work with the Rorschach.

Mila, Salvador E. Asociaciones libres: Test caracterologico-verbal de Portabella Duran. *Revista de Psicologia general y aplicada*, 1955, 10, 149-162.

A detailed classification scheme is described for the clinical evaluation of free associations. Interpretative considerations are presented.

Friedemann, A. Divers aspects de la pedopsychiatrie. *A Crianca Portuguesa*, 1955, 14, 27-54.

A discussion of child psychiatry and the contributions of tests such as the Wartegg and Color-Pyramid.

Corboz, J. Roberto. Conceptions actuelles de la schizophrénie infantile. *A Crianca Portuguesa*, 1955, 14, 71-112.

Theoretical and clinical considerations in childhood schizophrenia with reproductions of drawings by patients.

Cotte, S. Etude statistique sur le registre de perception dans le Test de Rorschach des enfants impuberes de 7 à 11 ans. *Giornale di Psichiatria e di Neuropatologia*, 1955, 4, 1-14.

Normative data on Rorschach content obtained from both sexes at age levels from seven to eleven.

De, Bimaleswar. Etude factorielle sur la validité de la technique d'association de mots pour différencier normaux et anormaux. *Revue de Psychologie appliquée*, 1955, 5, 193-202.

A new list of 94 words was used with normal, neurotic and psychotic subjects. Factor analysis of many variables yielded three factors which differentiated the groups: speed, stereotypy and disorientation.

Okino, H.; Fukui, I.; and Sameshima, T. The Sentence Preference Test. *Folia Psychiatrica et Neurologica Japonica*, 1955, 9, 218-225.

A multiple-choice sentence completion test devised for children describes adjustment in areas of family, sex, interpersonal relations, and self-concept. Normative data are presented.

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NOTICE

The newly formed Committee on Primary Records of the Division of Anthropology and Psychology, National Research Council announces its sponsorship of a publication series on Microcards, of personality materials collected in non-literate and non-Western societies. The new series which will be entitled "Publications of Primary Records in Culture and Personality," is under the editorship of Bert Kaplan, and is made possible by a grant from the National Institute of Mental Health. Its chief purpose is to make available to research workers in the culture and personality field, the rich personality mater-

ials from over 70 societies which have been collected by means of projective tests, life histories, dreams and interviews. It is hoped that the availability of these raw data will be important in facilitating research and will make possible the investigation of a number of new problems. The series is being published by the Microcard Foundation, an affiliate of the University of Wisconsin Press. Microcard reproduction, which has never before been applied to the problem of the dissemination of original materials in psychology or anthropology, makes possible the reproduction of as many as 60 8½" by 11" pages on a single 3" by 5" card. Thus very small editions are possible at minimum expense. A new pocket Microcard reader has recently come on the market selling for \$25 so that work with Microcards need no longer be confined to libraries.

The first volume of the series is planned for May publication. It will include the materials of about 25 workers and will have approximately 4,000 pages of data. The cost to purchasers will be in the neighborhood of 1 cent a page. Future volumes will appear periodically as data becomes available. Thus far about 75 workers have agreed to contribute their materials to the series and almost 30,000 pages of data are involved. Inquiries concerning the series should be sent to Bert Kaplan, Department of Psychology, University of Kansas, Lawrence, Kansas, or to The Microcard Foundation, Box 2145, Madison 5, Wisconsin.

The Committee on Primary Records plans to conduct an investigation of the significance of the dissemination of primary records in other areas in anthropology and psychology. It will examine the problems involved in the preservation, storage, retrieval and dissemination of such materials and will attempt, with the help of pertinent specialists, to identify those original materials whose general availability is of present or potential sci-

entific importance. The chairman of the committee is A. Irving Hallowell. Other members are Roger Barker, Wilfred Brodgen, Melford Spiro, and John Whiting. Bert Kaplan is executive secretary.

ANNUAL WORKSHOP IN PROJECTIVE DRAWINGS

The 1956 Annual Workshop in Projective Drawings will be conducted in New York City by Emanuel F. Hammer, Ph.D. and Selma Landisberg, M.A., on August 6-9th, from 9:30-12 and 1:30-3 daily. The workshop will provide a grounding in fundamentals and then go on to advanced considerations of differential diagnosis, psycho-dynamic appraisal, anxiety, the individual's psychological resources as treatment potentials, and the use of projective drawings in therapy. In addition to Buck's H-T-P technique and Machover's Draw-A-Person Test, the workshop will include the Draw-A-Family procedure, Harrower's Unpleasant Concept Test, the Drawing Completion Test, the Draw-A-Person-in-the-Rain modification of Abrams which attempts to elicit clues to the self-concept under conditions of environmental stress, Schwartz's Draw-An-Animal concept useful for disclosing the biological side of the bio-social coin, Calligor's Eight Card Drawing Test which frequently digs down into the deepest layers of the subject's psychosexual identification,

and free doodles.

Information as to admission, fees or requirements, may be obtained by writing to Miss Landisberg, 204 West 88th Street, New York 24, N. Y.

The Third International Rorschach Congress will be held in Rome, Italy from September 13 through September 16, 1956. The first day will be devoted to organizational and welcoming events. Scientific meetings will be held Friday through Sunday. Congress president will be Professor M. Gozzano.

Tentative program:

- I. Clinical value of the Rorschach
 - (a) Organic psychoses. Proposed speakers: Professor Delay, Pichot, Lempérière, and Perse of the Sorbonne.
- II. The light-determined response. H. Binder (Zurich), E. Bohm (Copenhagen), S. J. Beck (Chicago).
- III. Communications by younger Rorschach workers.
- IV. Special Rorschach studies. The following subjects are under consideration: (a) movement responses, (b) color associations, (c) light determined associations, (d) the normal Rorschach pattern in various ethnic and social groups.

For further information write to: Dr. Med. A. Friedemann, Secretary, International Rorschach Society, Pecheurs 6, Bienne, Switzerland.

The following manuscripts have been accepted for publication as of May 31, 1956.

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| Ansbacher, H. L. | Social interest, an Adlerian rationale for the Rorschach human movement response. |
| Bloom, Bernard L. | Prognostic significance of the underproductive Rorschach. |
| Coan, Richard | A factor analysis of Rorschach determinants. |
| Coleman, James C.
and Smith, John R. | The relationship between manifestation of hostility in projective tests and overt behavior. |
| Fiedler, Miriam F.
and Stone, L. Joseph | Rorschachs of selected groups of children in comparison with published norms: I. the effect of mild hearing defects on Rorschach performance.
II. The effect of socio-economic status on Rorschach performance. |
| Jones, Richard M. | The Negation TAT: a projective method for eliciting repressed thought content. |
| Kaplan, Bert
and Berger, Stanley | Increments and consistency of performance in four repeated Rorschach administrations. |
| Lisansky, Edith S. | The inter-examiner reliability of the Rorschach test. |
| Pick, Thomas | A critique of current methods of Rorschach scoring. |
| Sargent, Helen D. | Insight Test prognosis in successful and unsuccessful rehabilitation of the blind. |
| Spiegelman, Marvin | A note on the use of Fine's scoring system with the MAPS tests of children. |
| Spiegelman, Marvin | Rorschach form-level, intellectual functioning, and potential. |
| Wiener, Gerald | Neurotic depressives' and alcoholics' oral Rorschach percepts. |
| Wolfson, William
and Wolff, Frances | Sexual connotation of the name Blacky. |
| Zeichner, Abraham M. | Conception of masculine and feminine roles in paranoid schizophrenia. |

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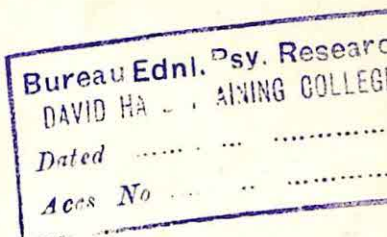
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Symposium on the Use of Projective Techniques as Research Tools in Studies of Normal Personality Development¹

Observations on the Use of Projective Techniques in Child Development Research

VAUGHN J. CRANDALL

Fels Research Institute for the Study of Human Development

While most projective tests were originally developed and used in applied clinical settings, these techniques have become an increasingly important and integral part of personality research as well. This has been especially true of research concerned with normal personality development, the topic of the present symposium. The participants of this symposium are members of various child development research centers, with the writer representing the Fels Research Institute for the Study of Human Development.² It is not the purpose of this symposium to discuss all research emanating from these centers using projective techniques as research tools. Detailed reports of these studies have appeared in various journals. Rather, the papers of this symposium will attempt to evaluate the general applicability of projective techniques in child development research. The pres-

ent paper will be concerned with several methodological problems intrinsic to the use of projective tests in this area, and with some of the advantages and limitations of various projective media as research tools in current and future child development research.

One problem inherent in, though not unique to, the use of projective techniques in personality development research is that of the categorization of responses. Since projective techniques are designed to elicit relatively "free", unstructured responses, these responses must be subsequently categorized by the researcher in some fashion. (Often in past research, projective test responses have been analyzed according to a hodge-podge of empirically-derived, and atheoretical categories. "Sign approach" methods for analyzing Rorschach protocols exemplify this approach. Such empirically-derived systems can seldom be used to categorize responses evoked by techniques other than those for which they were originally devised and, as a result, data analyzed in such a manner often lack generality. These data can neither be directly compared with data gathered by other personality assessment methods, nor can they be readily related to existing personality theories. In the light of these limitations, it is incumbent on future personality development research to develop theory-oriented systems of categorizations applicable to data elicited by a variety of personality assessment methods.) Ideally, such systems of categorization should be equally suitable for objective, subjective and projective responses whenever possible. Examples of existing methods of analysis which may conceivably be used in this fashion are Raimy's

¹ This and the four following papers are abridged versions of papers read as part of a symposium on projective techniques as research tools in studies of normal personality development sponsored by the Society for Projective Techniques and Division 12 of the American Psychological Association at the American Psychological Association meeting in San Francisco, September, 1955. Moderator: L. Joseph Stone.

² The Fels Study, originating in 1929, is a continuous longitudinal, multi-disciplinary research project concerned with the development of normal children. The sample, at any given time, is comprised of approximately 180 children from 125 middle-class families. Original application for admission to the Study is made by mothers during pregnancy. From the time of admission until the child's eighteenth birthday, the father, mother and child are members of the Study, with longitudinal and experimental data being obtained from each by the Fels Departments of Psychology, Biochemistry, Physical Growth and Psychophysiology.

PNAV method developed within the framework of self-concept theory (10), Dollard and Mowrer's Discomfort-Relief Quotient influenced by Hullian learning theory (7), and the writer's Social Reinforcement Index developed within the context of Social Learning Theory (5).

A second general problem of personality development research arises from the fact that the responses of research subjects are obviously inextricably bound to, and determined by, the assessment methods employed. This has mixed blessings for personality development research. On the negative side, it strongly limits the scope of generalizations which can be made from personality research findings until more is known concerning the comparability of data obtained with various assessment techniques.

In the area of child development research, for example, a large number of studies have investigated various aspects of maternal behavior as determinants of children's personality development. Almost all of these investigations have relied on subjective reports of mothers concerning their maternal behavior practices. Assessment methods used to elicit these reports have included interviews, questionnaires and self-rating scales. These studies were based on the implicit assumption that mothers' reports of their maternal behavior were reasonably representative of their actual interactions with their children. No research, however, has attempted to evaluate the degree of correspondence between mothers' reports and their actual maternal behavior. We recently conducted a study with our Fels mothers addressed to this problem (6). The mothers were required to rate various aspects of their maternal behavior using twenty-four self-rating scales. These scales were specially constructed to parallel twenty-four of the Fels Parent Behavior Rating scales. The latter scales were used by a Fels Home Visitor, an experienced clinical psychologist, to rate the mothers' overt

maternal behavior as observed in the Fels Home Visit Program. When the two sets of ratings were compared, they were, in general, positively related. However, in none of the twenty-four correlations was as much as half of the variance held in common. Self-reported maternal behavior was clearly not the same as observed maternal behavior. While these results are not particularly surprising, they illustrate the fact that data gathered by different assessment techniques may be far from comparable, especially when these data are based on different levels of expression—objective, subjective or projective. The results of such a study add a note of caution for maternal behavior research in general. Until more research has been done on the comparability of data obtained by various methods, the lack of knowledge in this area places obvious limitations on the scope of theoretical generalizations which can be made on the basis of present maternal behavior research findings.

On the positive side, the lack of congruence between data collected by different assessment techniques may provide the possibility of increased accuracy of prediction through the combined use of objective, subjective and projective behavioral information. The ultimate success of such personality development research is, however, contingent on the caliber of personality assessment methods at our disposal. In sheer number, there is no shortage of potential techniques. The last ten years have witnessed a vast proliferation of assessment methods, particularly projective tests. Unfortunately, many of these have little demonstrated validity or reliability beyond testimonials from their authors. Others, originally developed for clinical application, have been proved diagnostically useful, but still await evaluation as research tools with normal children and adults.

Several questions must be answered regarding the utility of an assessment method for normal personality

development research. These include, among others, the following: (a) Does the technique elicit behavior relevant to the problem under investigation from all ages of children studied? (b) At what level of expression is this behavior elicited? (c) Is there an adequate sampling of this behavior to insure stability of measurement? (d) Is the range of this behavior sufficient to allow inter-subject and intra-subject variability? At the moment, few of these questions can be answered in respect to existing methods of personality assessment. As a result, the choice of assessment techniques in personality development research must often be based on intuitive hunches and/or haphazard trial-and-error. The progress of future personality development research could be greatly facilitated if what might be called cartographic studies of existing personality assessment methods were included in this research. These investigations could systematically map out the areas, levels and frequencies of behavior elicited from children of various ages by each of these techniques. Such information would be useful, not only to evaluate the techniques as potential research tools, but also to delineate areas where new methods must be devised.

Cartographic information of this nature should ultimately open new avenues of research. Longitudinal investigations of the covariation of children's objective, subjective and projective behavior should be possible when assessment techniques covering comparable areas of behavior at each of these three levels of expression are available. Such studies could be addressed to a variety of personality development problems. For example, while a number of studies have been conducted on the acquisition of social needs in children, there has been little research concerned with changes in levels of expression of these needs as children mature. Obviously, such changes are an important part of children's socialization and personal-

ity development. A child learns, through his social experiences, that the overt expression of certain needs is socially acceptable while the overt expression of other needs is not. Studies of adult subjects have demonstrated that correlations between objective and projective expressions of socially acceptable needs differ predictively from those of socially unacceptable needs. In the future, it should be possible to study changes of such correlations in children's behavior with age, as well as factors producing these changes. Similar kinds of investigations should be feasible in respect to the development of ego defenses in normal children.

There is one trend in current child development research which should radically affect the future role of projective techniques as research tools in this area. As Radke-Yarrow and Yarrow noted in last year's *Annual Review of Psychology* (9), studies of children's behavior testing specific hypotheses derived from systematic personality theories are rapidly increasing. In these kinds of investigations, the hypotheses of a study rigidly determine the nature of behavior to be measured and, thus, dictate the requisite characteristics of techniques which may be employed to elicit this behavior. It is unlikely that standard projective techniques can be used in much of this research. More often, studies of this nature will require either the modification of existing techniques or the development of new ones.

There are, fortunately, several projective media which can be readily adapted to meet theory-oriented research needs. One of these is TAT-like pictures. Specially-constructed sets of pictures can be developed to test a variety of theoretical hypotheses. Examples of this are Blum's use of the Blacky pictures to test psychoanalytic hypotheses (1), some of the studies of McClelland, et al, on need achievement (8) and our own use of specially-constructed pictures

to test hypotheses derived from Social Learning Theory (2, 3, 11). Incomplete stories and sentences are also particularly adaptable for theory-oriented personality studies of children; sets of either of these can be readily constructed to elicit behavior relevant to a variety of specific hypotheses. Semi-structured imaginative play situations can also be used with children in a similar fashion.

On certain occasions, future theoretically-oriented personality studies may be able to employ existing projective materials as they are, but will require subjects to use these materials in new ways. For example, we are currently conducting a normative, cross-sectional study of children's social perceptions and expectations using MAPS figures as stimuli. The standard procedure for administering the MAPS figures is not used. Rather, each child is presented selected groups of MAPS figures and is told to sort them according to whether they represent people he would like or dislike. The child is also encouraged to discuss the basis of his decisions. This method elicits material from each child in respect to the specific personality characteristics he imputes to the various figures and the cues upon which these projections are based, while eliminating the imaginative story-telling aspects of the MAPS procedure. Preliminary use of this technique suggests that it is a reasonably effective one for eliciting children's responses indicative of their interpersonal perceptions and expectations. An interesting variation of this method is the use of actual persons as projective stimuli. We have recently found this variation useful with college students (4), but have not, as yet, tried it with children.

Finally, there is one projective medium, used sparingly in the past, which appears to be a particularly promising one for future theory-oriented research on normal personality development. These are motion pictures. In the last five years or so, a

sizable number of documentary psychological films have been produced. Some of these films have dealt with various stages of personality development. Others have portrayed specific types of inter-personal relationships among children and between children and adults. Still others have focused on particular aspects of personality dynamics. Many of these films may be suitable for specific research problems. For example, existing films on parent-child relationships could be used in research on parental behavior to elicit projective responses of mothers and fathers revealing their parental attitudes, aspirations and expectations. Other available films could be employed to study age differences in children's social perceptions and expectations as reflected in their descriptions of the motives and personality characteristics of characters in the film stories.

To summarize, while projective techniques will undoubtedly play an important role in future studies of normal personality development, their exact contribution cannot be predicted. It seems likely that standard projective tests will be employed less frequently than in the past. While these techniques will, of course, continue to be used in normative studies of children's projective behavior *per se*, they will probably not be an important part of future theory-oriented personality development research. The contribution of existing projective techniques in this latter research will depend, in part, on future demonstrations of their utility as research tools through special validation and cartographic studies. Their ultimate contribution will largely rest on the imagination and ingenuity with which these techniques can be modified, and new ones developed, to meet the ever-changing needs of future research.

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Use of the Rorschach Test in Longitudinal Studies of Personality Development ¹

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In the present paper, I propose to discuss some of the ways in which one specific projective technique, the Rorschach Test, can be used fruitfully in longitudinal studies of personality development such as those being carried on at the Child Research Council in Denver. I shall make no attempt to present any formal, systematic summary of our Rorschach results on particular problems; rather, I shall discuss briefly some of the potential research advantages afforded by Rorschach material collected longitudinally on intensively studied individuals, as well as some of the theoretical and methodological questions and difficulties which arise in such an approach. In the course of this discussion, I shall refer informally to some of our own Rorschach findings.

By way of background information, perhaps it would be helpful to say a few words about our psychological studies, which represent one part of the Child Research Council's program of research on physical, physiological, and psychological growth. Essentially, our research is concerned with the intensive longitudinal study of a relatively small number of "normal" individuals, who are seen from birth onwards, as often as once a month during the first year, and with gradually decreasing frequency as the child gets older. The major long-range objective of our investigations is the elaboration and validation,

through prediction studies, of various hypotheses stemming from the psychoanalytic theory of personality development. Among the techniques we use are observations of mother and child during infancy, combined with developmental testing during this period, periodic intelligence testing, play interviews, interviews with parents, observations of the child at home, and a variety of projective techniques, including the Rorschach and TAT. At the present time, Rorschach testing is begun at about age two, or shortly thereafter, and it is repeated about once a year, unless more frequent testing seems indicated in a particular case.

It is our feeling that repeated administration of the Rorschach in longitudinal studies offers a dual scientific advantage. In the first place, we feel that the Rorschach is of great help in evaluating developmental changes in various aspects of the child's personality, and hence it will enhance our understanding of developmental processes. Second, we are convinced that the collection of Rorschach protocols on intensively studied individuals provides a valuable opportunity for systematic study of the validity of a variety of Rorschach inferences. Implicit in the above statements is the belief that both the Rorschach Test and our understanding of personality development will profit when there is an opportunity to study them both simultaneously.

For purposes of conceptualization, let me sketch briefly three types of situations which might obtain when a psychological test is utilized in developmental studies. 1) If performance on a test of unknown or un-

¹ Grateful acknowledgment is made to Dr. John D. Benjamin, director of the psychological studies at the Child Research Council, for his assistance in the preparation of this paper. Research supported in part by grants from the Field Foundation, Commonwealth Fund, and, Scottish Rites Research Committee.

demonstrated validity is found to parallel closely well established developmental changes, this would provide strong evidence that the test is a valid measure of the processes undergoing change. In some respects this was the sort of situation which characterized Binet's development and validation of his intelligence scale. 2) When a test is known to have high validity and reliability for the measurement of a particular psychological function, then its administration to children in developmental studies would provide us with highly accurate information about age changes in the process under study. A good test for measuring growth of children's vocabulary would be an illustration here. 3) I would like to suggest that, for the most part, when we use projective techniques in the study of personality development, neither of the two situations just mentioned applies. Rather, we commonly find ourselves in a position where our theory of developmental changes may be reasonably convincing but in need of a great deal of elaboration and verification, while much the same thing can be said about the rationale and validity of our projective techniques. In such instances, we look for some sort of congruence between projective test results and the changes postulated by developmental theory, or between projective test results and observed developmental changes. When we find such congruence, the validity and rationale of the projective technique, as well as the developmental theory are given added support. When such congruence is not found, then one has to decide in each case whether to question the validity of the projective test or the developmental theory, or both.

Let me give you an illustration of a study (2) where the degree of congruence found between projective test results and developmental theory may be interpreted as lending considerable support to the validity of

both. Some time ago, Dr. Benjamin became interested in using the Rorschach to follow the course of anxiety in a small group of children from the age of about $3\frac{1}{2}$ to puberty. As a rough quantitative estimate of the amount of anxiety present at any given time in the Rorschach record, he used seven signs which were weighted differentially, on the basis of his clinical experience with children and adults. The validity of this particular combination and weighting of signs, of course, was not known.

When the course of anxiety, thus measured, was followed longitudinally for a small group of boys and girls, although there were some marked differences in the graphs for various children, the common trend for the group of children was of great interest. In general there was an anxiety peak between four and five years, then a descent and leveling off, followed by a gradual or sudden ascent just before puberty. The correspondence between these age changes in anxiety as measured by the Rorschach, and the pattern of psychosexual development from the preschool period to adolescence as depicted by psychoanalytic theory, is quite clear. Since there is good evidence that there is a close connection between at least some anxieties and sexuality, we do not believe it would be going too far to state that the congruence found between changes in anxiety level and the psychoanalytic theory of changes in sexuality during this period, can be interpreted as lending some support both to the validity of the Rorschach measurements of anxiety and to the psychoanalytic theory of psychosexual development.

Now suppose that the anxiety changes were completely disparate with what one might expect on the basis of psychoanalytic theory. To reconcile these findings one would want to re-examine either the rationale of the anxiety measures or

the developmental theory, depending upon which was regarded as the weaker link in the chain. In most instances however, one would probably want to re-evaluate both the test theory and the developmental theory in the hope of explaining the lack of relationship. This would normally lead to revised formulations and new investigations which would contribute to our understanding and use of the projective technique, as well as to our developmental theory.²

There are many specific problems which could be fruitfully investigated with the Rorschach in longitudinal studies of personality development. By way of illustration, let me describe very briefly just a few of these which happen to be of particular interest to us. A second part of the study just described was concerned with differentiating between free-floating and phobic anxiety, again based primarily upon clinical experience with adults, and the use of this differentiation in following longitudinally, sex differences in the developmental vicissitudes of early phobic fears. There seem to be considerable grounds for believing that we can go further and reliably differentiate two types of phobic anxiety: first, a series of fundamental fears such as fear of the dark, fear of separation from mother, fear of death, etc., which, as suggested by Benjamin and in somewhat different form by Oberholzer (8), may be inferred from the presence of black shock, especially on card IV, when this black shock can be differentiated from shading shock. The second group of anxieties consists of fear of bodily injury, or mutilation and castration fears, which Benjamin found were reflected by red shock on cards II and/or III, or by blood and fire responses to cards II or III in the presence of color shock

on cards VIII, IX, and X. The possibilities for evaluating the validity of these Rorschach interpretations of anxiety on children who are being intensively studied longitudinally are quite obvious, and very challenging.

From the standpoint of elaborating and clarifying Rorschach rationale, the great importance of research on age changes in all Rorschach location, determinant, and content categories is self-evident. The increased interest in such problems, as attested to by the number of recent studies in this area, both longitudinal and cross-sectional, (e.g. 1, 7), is indeed encouraging. In longitudinal studies, one has the opportunity to relate changes in Rorschach scoring categories for individual children, to knowledge about personality changes derived from other sources. Studies of this type should assist us greatly in identifying some of the psychological processes or characteristics reflected in various Rorschach scoring categories. At the same time, they present a particularly good setting in which to evaluate the reliability of various Rorschach response characteristics. In investigating the reliability of any personality test, it is not enough simply to examine the extent to which the test yields similar results upon retesting. One also needs to know whether the underlying traits or functions being measured have remained stable or are changing. Longitudinal investigations of Rorschach response changes as related to independently observed changes in the individual should help us evaluate the reliability of the various scoring categories, some of which can be expected to be considerably more reliable than others (e.g., 6, 10).

It is felt by many that the most convincing evidence for both the usefulness and validity of the Rorschach technique is found in the area of multiple-sign interpretation for purposes of clinical diagnosis in adults. In view of the established clinical value of the Rorschach with adults,

² Some of the methodological concepts concerning validity which are involved here are discussed systematically in Cronbach and Meehl's recent paper on "construct validity" (3).

it would be of great theoretical and practical value to identify and follow from an early age Rorschach manifestations of the onset and development of psychopathological processes. Such research would contribute both to our understanding of the development of psychopathology, and to the validation of the Rorschach.

The research questions which we have discussed thus far involve the use of the Rorschach primarily as a technique for the assessment and description of personality. The Rorschach may also be used primarily as an experimental task, especially for the study of perceptual processes. The work of Werner and his associates at Clark University (4, 5), as well as other studies in which principal interest is centered on the way in which the blot or blot parts are organized, particularly in children and schizophrenics, illustrate this experimental use of the Rorschach, in which interpretation as such plays a minor role. Another experimental application of the Rorschach which would seem to have particular promise in longitudinal studies is the structure and use of the inquiry for studying the development of thinking processes, in close analogy to Rapaport's use of the inquiry for studying thinking in schizophrenics (9).

Let us next consider several theoretical and methodological problems which arise when the Rorschach is utilized in developmental studies, particularly of the longitudinal sort. There is first of all the problem of frequent repetition of the test over a long period of time, and the effect this may have upon Rorschach responses and their significance. We are faced with a dilemma here: one wants to administer the test often enough to detect significant changes in personality functioning, but at the same time not so often as to render the test somewhat less effective in known or unknown ways because of too frequent repetition. Actually, the effect of repeated testing is a very critical

problem in all longitudinal studies, since one needs to know to what extent change or lack of change in test response reflect the state of the underlying process or trait being evaluated, and to what extent they represent same artifact due to repetition of the test.

Another problem of both theoretical and methodological importance is the fact that when identical test tasks are presented to children at different ages and yield results that seem to differ only quantitatively or in level of performance, one needs to examine the possibility that there may also be qualitative age changes in the psychological processes which are involved in test performance. Putting it simply, the problem is that the same test may not measure the same thing at different ages. For example, formboard performance at age four or five might reflect differences in spatial perception primarily, while the same formboard given to older children would probably involve principally individual differences in psychomotor speed. Consequently, a growth curve showing age changes in formboard performance would not represent a single psychological function but several functions, each of which may have quite different patterns of growth. In developmental Rorschach studies it is quite obvious, for example, that $W\%$ in adults represents something qualitatively quite different from $W\%$ in children, so that mere plotting of $W\%$ against age without an examination of qualitative differences in the underlying processes would be relatively meaningless. Similarly, we need to know whether the psychological implications of shading responses, movement responses, color responses, etc., are the same for children at different ages and for adults.

In this paper I have tried to emphasize our conviction that the use of the Rorschach technique in longitudinal studies of personality development presents the opportunity for in-

vestigating many significant research questions, while at the same time it raises some important theoretical and methodological problems. I have tried to stress the belief that studies of this sort can make important contributions both to the theory and validation of the Rorschach Test, as well as to the elaboration and verification of developmental theory, particularly if emphasis is placed upon understanding the psychological processes involved in Rorschach test performance.

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The Predictive Potential of Projective Tests for Nonclinical Populations

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Projective tests are often used to assess personality dynamics in order to predict the functioning of the respondent in real life situations. Success in making such predictions has been limited. It is our aim in this paper to present an approach in which this problem has been handled in the context of studying parent-child interactions and relationships, with interesting and suggestive results.

At least two reasons can be advanced for the limited success of projective tests in prediction, especially with nonclinical populations. The first reason revolves around the relationship existent between personality and environmental variables as they interact within a context of real life situations; the second pertains to the content of the projective test itself and its relation to the real life situations in question.

Our assumption is that the normal individual's overt behavior is an expression of his personality structure in conjunction with the demands of the immediate environment. Being normal, the individual is sufficiently flexible and integrated to make a variety of responses which are appropriate to the requirements of the situation. Consequently, in order to enhance prediction, it is important to denote the parameters of the real life situation. It becomes important to define and specify the types of en-

vironmental situations and conditions which one is predicting.

In the exploratory study to be reported, we conceptualized in detail the environmental aspects of the specific situation toward which we were predicting. In this case, we predicted parent behaviors which were used in attempts to modify the behavior of the child.²

In addition to such conceptualization of the pertinent social environment, the particular type of projective test employed is of considerable importance in enhancing predictive success. We reasoned that since the parental behavior we wished to predict took place in the context of interaction with the child, we should use a projective test which would elicit those features of the parent personality which manifest themselves in such interactions. At the same time it was apparent that too much structure might result in a great correspondence between test response and predicted behavior. This could destroy the projective nature of the test. Therefore, our projective test was made up of parent and child figures in unstructured situations. As the parent revealed himself in this context, we reasoned, he would offer us a relevant set of data upon which to predict his behavior in the real life situation. He would indicate his attitudes, feelings, anxieties and expectations as a parent and as a person. We also expected his defense pattern, his ego needs, and his impulse expressions and controls to manifest themselves in the same context.

¹ The research project out of which this paper was developed is entitled, "A Study of Parent Influences Used in Controlling Child Behavior and their Psychological Effects on the Child," and was begun with funds granted by the Social Research Foundation in 1952. The project is currently financed by a grant from the Foundations' Fund for Research in Psychiatry.

² The parent behaviors are called influence techniques. The details of their conceptualization as well as the interaction sequence within which they occur are described in detail (3).

We selected a TAT type of projective technique of thirteen cards depicting adult and child in various ambiguous poses. We selected cards which would depict all possible combinations of parents and children in terms of sex. Thus we had a mother-son and a mother-daughter card, a father-son and a father-daughter card, family scenes of parents and children, cards of children alone and adults alone. Some of the cards came from the standard Murray set, others from Alexander's set and the remainder we made up ourselves (1, 2). The cards we used gave a more representative range of parent-child inter-personal combinations than could be obtained from either of the two existing sets mentioned.

This projective test was administered to all parents participating in our project. It was administered in the standardized fashion as described by Murray. We probably probed more than is usual in order to insure comparable details for all records.

Evidence about the influence technique patterns of the parents was obtained through an interview in which the parent described in great detail the interaction between him and his child as it occurred the day prior to the interview. For mothers a single day was used, whereas for fathers a single day during the work week was used and a second interview was given to obtain data on a complete day at home. In every case the day described was the day prior to the interview. The interview was highly structured since a detailed chronological account was desired (4). The interviewer probed for omitted details and also asked the parent to state the rationale for his behavior, his judgment of the child's feelings and attitudes during the interaction, and the success of the influence techniques used.

Our procedure for exploring the usefulness of the projective test as a basis for predicting parental influence techniques was to make predictions from the projective test and com-

pare these opinions with the parent's report in the interview. One judge analyzed the projective record, interpreting the entire protocol within a modified psychoanalytic framework, with particular emphasis on themes, needs, and defense systems of the respondent. On the basis of the derived personality picture, predictions were made as to the influence techniques a parent used. The second judge independently analyzed the interviews for the influence technique patterns used by parent. The two sets of materials were then compared.

We shall briefly present in case summary form the salient feature of three sets of records. The three parents were selected from the twenty-two families involved in our study. All three are fathers of preschool children and to all intents and purposes are within the normal range of adjustment. For each we shall present the projective material, the predictions, and findings from the interview material. Our predictions will be toward technique patterns, since we were unable to predict to specific isolated techniques.

The first father reveals in his projective a great deal of insecurity, uncertainty and doubt. In defense against this, he is overly self-confident, rigidly dogmatic, and oriented toward close control of his environment. These characteristics are ego alien and he tends to project them onto others. Impulses are poorly controlled and their expression is justified in terms of the demands of legitimate or self-ordained authority. He perceives the world as a depriving, hostile place in which he is denied his just due. He is, however, able to express positive emotions in situations providing little or no threat.

From this picture, it was predicted that the father's influence techniques would be predominately negative and coercive. He would demand immediate compliance, and be relatively inconsiderate of the child's needs. When, however, the child did not

threaten his authority, he could demonstrate sympathy and affection.

The predicted pattern was clearly manifest in the interview. His techniques are largely negative, with high frequencies of prohibitions, threats, instilling fear, and the like. Explanations are rare and oversimplified. "Reasons" for his actions are given primarily in terms of his own wish. The techniques are coercive and disobedience is not tolerated. If immediate compliance is not forthcoming, he threatens the child, and threats are invariably carried out when the child ignores them. Verbal and physical expressions of affection occur but are generally reserved for those situations in which the child complies immediately or spontaneously does what is expected.

The second father shows strong needs for intellectual recognition and status achievement. These are reflected in a compulsive drive to excel and make professional contributions. He evidences a general and pervasive egocentric orientation toward people, low frustration tolerance, and inadequately developed defenses against aggressive impulses. When aggression is felt, he may project blame, but usually he tends to withdraw with accompanying feelings of guilt.

It was predicted that the influence techniques used by this father would show by their content and timing little consideration for the child's needs and feelings. It was further predicted that noncompliance would be highly frustrating to him and would result in impulsive and drastic action. It was also predicted that he would frequently use overly intellectual techniques.

These predictions are borne out in the interview. This father's influence technique pattern indicates the frequent use of direct commands. When commands are not successful, he becomes impatient, and without considering the child's needs or involvement in the situation, demands immediate compliance or impulsively re-

acts with physical force. When commands or physical techniques are not applicable, e.g., in attempting to overcome fears, he uses lengthy and unduly complicated explanations. At times, after several unsuccessful attempts to change the child's behavior, he acquiesces and withdraws from the situation, frequently making some negative interpretation of the child's behavior. He also indicates hostility toward the child in his occasional mockery and shaming. He has some intellectual awareness of children's needs and as a result frequently initiates play activities in his child. Usually his interest quickly wanes, however, and he leaves to engage in some professionally relevant activity.

The third father, in his projective data, shows the presence of strong and successful defenses against aggressive tendencies, mainly repression and reaction formation. Consequently he operates as a solicitous individual who is considerate of others, avoids hurting their feelings, and in general tends to avoid conflict. He does not see hostility in others, except where obvious. Emotional expression in general is controlled and there is little spontaneity. He identifies strongly with all forms of societally sanctioned authority, seeing them as benign. He is conservative in outlook and has strong needs for conformity to middle class social values. Although he is oriented toward obtaining approval and acceptance from others, his level of self-acceptance is high. He appears to be generally well integrated and adjusted to his world.

It was predicted that he would be characterized by showing a great amount of concern, consideration, and sensitivity for the child. He would successfully attempt to avoid many conflictful situations. He would use techniques which are positively oriented and have their effect by inducing the child to want to do what is expected rather than coercing him into compliance. Being realistically oriented and sufficiently secure, however, he

could modify this pattern if the situation so demanded.

The extent to which the interview data bear out this prediction is striking. Direct commands or prohibitions are generally avoided. When used they are always tempered with explanations, with demonstrations of affection, or the injection of humor into the situation. Most techniques involve attempts to manipulate the child's need system, e.g., making the desired behavior attractive for the child, making a game out of the desired behavior, and playing with the child as a way of distracting him. There are many instances of reward and encouragement. Potentially conflictful situations are frequently avoided by anticipating them and preparing the child gently and patiently, or by attempting to make the psychological atmosphere in the house a pleasant one. A conscious concern in most attempts to influence the child is the child's feelings.

Despite this orientation to avoid conflicts with his child, he is able, when necessary, to take a firm stand, and even to use physical force if necessary. In the few instances in which force is used, it is followed by some show of affection, explanation, and/or reassurance.

The above pattern tends to break down when the child shows aggression clearly enough that it cannot be ignored or dismissed. Here the parent is apparently threatened enough that the defenses cannot operate smoothly. His response to this situation is

awkward and unsure. He acknowledges concern in this area and is aware that some discomfort exists here on his own part. Although this was not predicted from the projective material, it is entirely consistent with it.

The high degree of predictive success obtained appears to be a result of the following conditions: 1) using test stimuli which correspond content-wise to the area of real life under study; 2) predicting from a coherent personality picture of the respondent, using the entire record; 3) conceptualizing in advance the behavioral situation toward which the predictions are made.

Of course, we still do not know how the personality picture of the parent obtained in our projective test compares in completeness with other types of more generalized projective tests. But we do feel that where limited personality data are desired for predictive purposes, the approach suggested here is a fruitful one.

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Discussion: Projective Techniques as Research Tools in Studies of Normal Personality Development

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Until recently, the bulk of the large-scale Rorschach studies of normal children were limited to the simple establishment of age norms. This, of course, was an essential preliminary to any other type of research, such as investigation of the dynamics or varieties of adjustment in normal children, or of indications of psychopathology. With the publication of the McFate and Orr (8) adolescent norms in 1949 and the Ames, Learned, Metraux and Walker (1) norms for children two to ten years of age in 1952, the objective of establishing normative Rorschach scores throughout the whole range of childhood and adolescence has been met. A further normative datum that has been established by Hertzman and Margulies (6) and by Ives, Grant and Ranzoni (7) is that the so-called "neurotic signs" of Harrower-Erickson (5) and the "adjustment signs" of Davidson (4) do not apply to adolescents, since more than fifty percent of the subjects showed such signs. One limitation on any generalizations about child development made on the basis of the above or other studies is that the sample populations investigated have almost always consisted of children of superior intelligence. We still do not know what the Rorschach scores and behavior ratings of strictly average children in the I.Q. range 90 to 109 look like.

After a long normative phase, there are signs that developmental research is about to enter a new, more dynamic phase. Dr. Crandall has just told us that the Fels Institute is now interested in studying the effect upon the development of the child of different varieties of maternal behavior within the normal range. In fact, in

1952, Montalto (9) published a very interesting Rorschach study of the relationship of children's adjustment to four different types of maternal behavior, namely, ideologically democratic, restrictively cold, warm and spontaneously democratic, and restrictively warm. An experience balance pattern denoting affective stability was most characteristic of the children of the spontaneously democratic mothers and least characteristic of the children of restrictively cold mothers.

Dr. Sigel is also interested in studying parental attitudes. Whether one devises new projectives, as he did, or whether one utilizes the standard techniques, probably depends on whether one's aim is a kind of mapping of the total personality, or a focusing on specific variables. For the latter, a new technique focused on such variables may have advantages.

In reviewing the many studies of child development, whether by projective techniques or other means, one cannot help but be struck by the fact that, although the rich source of testable hypotheses offered by the psychoanalytic theory of child development has long been available to us, so little use has been made of it in research. I find it very gratifying, therefore, that Dr. Ricciuti intends to utilize these hypotheses as the basis for his research. His quotation of the findings of Benjamin and Hilden (2) in regard to the two peaks of anxiety in children's Rorschachs and their relationship to the psychoanalytic theory of the vicissitudes of the Oedipus Complex is an example of this type of research. Another interesting, but unpublished example of such research, this time emphasizing

psychoanalytic ego psychology, is Betty Borenstein's study (3) of the relationship between Thematic Apperception Test fantasy and overt behavior in regard to two needs, dependency-frustration and object-oriented anger (verbal expression of aggression). The hypothesis tested was that the relationship between TAT and overt behavior would be dependent upon the inter-action of three factors: 1. The extent of experienced frustration; 2. Whether social demands are inconsistent with the needs; 3. The kind of ego-functioning available to the individual for dealing with the problems presented by conflicting internal desires and social demands. The ego-functioning variables include tenuous ego controls, ego disintegration, withdrawal, tension-binding and wish-fulfillment or denial. For the purposes of the study, it was assumed that behavioral High Dependency would constitute a problem for both boys and girls, and that High Aggression would be a problem for girls and Low Aggression for boys, because of lack of social acceptance. The major hypotheses were borne out by the findings.

As regards future developments, I believe that the contributions of modern psychoanalytic ego psychology are especially promising for enrichment of our work with projective techniques. The biggest obstacles standing in the way of such fruitful interaction are methodological ones relating to the question of how to do justice to the structural and dynamic complexity of human psychic function as it is expressed in test responses. The standard location, determinant and content scores, even when subjected to sign analysis or pattern tabulation, represent limited treatments that fail to take into account the full richness of Rorschach data. Rorschach workers have for some time been particularly aware of the limitations of Rorschach's static content categories, and several attempts have been made to find more dynam-

ically useful classifications. The best of these appears to me to be Schafer's (11) proposed method of thematic analysis, that establishes classes of thematically and theoretically related images that pertain only to dynamic trends and are not, as with some of the other classifications, tied rigidly to any specific pathological syndrome. Some illustrations of this orientation are as follows: Dependent Orientation (orality) is subdivided into supply, or oral-receptive orientation, and demand, or oral-aggressive orientation. Included under the former are food, food sources, food objects, food providers, passive food receivers, food organs, nurturers and protectors, etc. Under the latter are included devourers, devouring, engulfing and overwhelming figures and objects, deprivation, oral verbal assault, etc. Anal orientation and preoccupation includes direct anal reference, anal contact and perspective, dirt, and assault and explosion. Sexual attitudes are subdivided into fear of and rejecting attitudes toward masculine identity in men and fear of and rejecting attitude toward feminine identity in women. For both sexes this includes reversal, combining, blurring and arbitrary assignment of sex characteristics to the blots, reference to perversions, a hostile, fearful conception of the masculine role with phallic-aggressive emphasis, or on the other hand, castration emphasis. In addition, for men there is feminine emphasis on female clothing, materials and textures, and for women masculine emphasis on mechanical objects and athletics. Other categories deal with sado-masochistic orientation, authoritarianism, super-ego conflicts, rejecting attitude toward adult nurturant, parental role, negative identity or chronic feelings of failure and inadequacy, body narcissism, concern with reproduction or generativity, concern with aging and death, and emotional tone.

Schafer's improved content analysis, as well as Rapaport's (10) analysis

of verbalisms, represent valuable refinements of Rorschach interpretation. However, it still is not enough to know that orality, anality or phallic impulses are important motivating forces in a subject; a person's behavior and level of adjustment will be very different, depending upon the matrix of primitive impulsivity, defensive and adaptive mechanisms in which they are embedded. In order to deal with this complexity, we need research designs that simultaneously take account of scores, content themes, and test attitudes and behavior. For this purpose, Schafer has recommended the use of *interpretations* as our research units, rather than scores alone, or content alone. As he points out, "This total quantitative and qualitative approach takes into account the fact that similar interpretations may be arrived at on the basis of different specific indicators." So long as the patterns of specific indicators used are explicitly defined, there would seem to be no objection to such an approach.

Now, as to applications of such a psychoanalytic ego psychological approach to research in child development, they are obviously many. For instance, since Rorschachs have been collected on the Fels mothers, it would be interesting to establish patterns of maternal behavior by means of the Schafer method of using interpretations as research units and then relate these to the patterns derived from observation. One might examine childrens' Rorschachs for evidences of Drs. Benjamin and Ricciuti's valuable distinction between fundamental anxiety and castration anxiety. One could hypothesize that the former would be associated with more disruptive signs of anxiety and mainly oral content, the latter with less diffuse or total disruption of response and more content dealing with mutilation and missing parts.

As regards child development, psychoanalysis sees maturation as a process of progressive defense against

and ultimate mastery of various biological impulses. The application of Schafer's method to children's Rorschachs would appear to provide us with a powerful tool for the investigation of such developmental changes. It would be interesting, for example, to examine the content of the Rorschachs in the Benjamin and Hilden study to see if themes having to do with castration anxiety and threatening authority figures were especially prominent in the records of the five-year-olds, and content dealing with the problems of sexual identity in the records of the pre-puberty group. The likelihood of such findings is suggested by examination of content in the Ames, et al. series of Rorschachs. Phallic aggressiveness combined with castration anxiety was indicated by the prominence of violent human movement responses, emphasis on sexual parts and mention of parts missing or cut off in the records of four-year-olds. Counter-phobic behavior, belittling the cards as silly, characterized four-and-a-half-year-old boys. Five-year-olds seemed to be more concerned with what goes on between "daddy" and "mummy." Five-and-a-half-year-olds revealed anxiety related especially to large threatening figures, such as giants, ghosts and monsters. The Ames, et al. material gives hints of other interesting relationships between Rorschach data and psychoanalytic theories of child development. Psychoanalysis places the start of the phallic stage of psycho-sexual development in the third year, and this is paralleled by the beginning mention of sexual parts in the Rorschach. Formal school entry at six years of age marks the beginning of the latency period with its characteristics of increasing defense and sublimation. It is not surprising, therefore, to find that this is the age at which the Ames, et al. children for the first time gave an average of one human movement response, indicating that primitive impulses were beginning to be brought under control

and subjected to delay. However, their Rorschach data raises some doubt as to whether the Oedipus Complex is resolved as quickly, or whether latency is as complete as psychoanalysis has assumed. Anxiety in the form of Clob responses, i.e. responses based on reactions to diffuse shading, darkness and morbid content, reached an all-time high at seven years. Castration anxiety, in the form of content dealing with decay, damage and mutilation was still prominent. The typical obsessive-compulsive defenses of latency first appeared in the records of eight-year-olds as qualification, uncertainty and demand for accuracy of responses. The presence of anatomical responses in the records of eight and nine-year-olds reflected uneasiness in regard to body image. In fact, a fair degree of stability, equilibrium and resolution of infantile problems did not seem to be achieved before age ten.

I have gone into this re-examination of the Ames, et al. material in some detail in order to illustrate a number of possibilities inherent in the combined application of psychoanalytic theory and the Schafer method of Rorschach interpretation to research in child development. Much of what has been said in regard to the Rorschach would be equally applicable to research with the TAT, CAT or other projective techniques.

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Projective Techniques as Research Tools in Studies of Normal Personality Development

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A discussant is a critic whose "talk about talk . . . has no serious value except perhaps as an expression of *philosophy* in the critic." (3) With this citation from Santayana, I'm prompted to tell you first something of the viewpoint from which I read and appreciated the three excellent presentations.

The three centers of research in human development represented on this panel all study personality processes as they appear and operate in the child; all are concerned with the normal progress of these processes; and all employ projective techniques among others. These interests are also pursued at the Menninger Foundation by a research group associated with the Department of Child Psychiatry. Several years ago a team of clinical and social psychologists, a psychiatrist, a child analyst and a pediatrician began the study of coping patterns in normal pre-school children, most of whom are now in kindergarten, first and second grades. (8) The children had originally been selected and studied as normal infants by Escalona, Leitch, *et al.* (4) Three projective methods are used in this Coping Study, the Miniature Life Toy technique as developed and applied by Lois Murphy (8), the Rorschach, and the Children's Apperception Test. The Rorschach and CAT are the techniques I have been working with, concentrating at this point on what can be learned from the stories children tell.

To introduce my first general comment on projective techniques in child development research, I'll tell a story. Two military psychologists were discussing how to devise a projective test to pick which troops

should go to the tropics and which to the arctic. A social worker overhearing the conversation suggested a solution. "Why don't you ask them?" My sympathies are with the sensible social worker, for I once had a teacher of social work who wisely cautioned, "Never neglect the obvious."

Obviously it is foolish and wasteful to seek by devious means that which is directly accessible. In recent years projective tests have proliferated from clinical practice into research. Their justification? A high reliability and a better than chance coefficient of validity when correlated with clinical, observational or historical criteria. But many of the newer techniques, such as Sentence Completion and Situation Completion appear so patently close to the conscious cognitive and conative levels of ego functioning that what is gained in objectivity, speed of administration and scoring is often offset by the shallowness, meagerness and inconsequentiality of the material they convey. Projective techniques, their essence permitting, should of course comply with the rules of test rigor. But we should be no less rigorous in ascertaining that the proposed methods are *really more parsimonious and more useful* than direct observation, direct inquiry or collateral sources of information; that *they add new information*; or *produce new insights* for data already available from directly accessible sources.

Hoffman and Sigel say that when the projective technique and the conditions to be predicted are similar, predictability is enhanced, since the element of inference is thus reduced. But it seems to me the closer to the predicted behavior the form and op-

eration of your projective technique, the less projective the material you elicit will be. In other words, the more phenotypic the projective medium, the less inference is required, certainly. But also, the less genotypic the projective medium, the more limited the range and usefulness of the prediction will be. The problem may be put in terms of length of inference and depth of delving into psychic levels of consciousness optimally compatible with predictability. If we seek the central, cohesive, recurrent and therefore predictable aspects of ego functioning, we necessarily deal with very complex psychic processes, the projections of which require techniques of multiple parameters. Predictability then becomes a matter of inferential integration, interpretation and judgment on the part of the examiner—a time consuming procedure. The as yet not fully tested assumptions back of all projective techniques are first, that they are indirect time-and-labor saving devices to get at material more laboriously accessible by direct means; and second, that projective techniques deliver material otherwise inaccessible in the subject's usual state of alertness and conscious control.

We tend to take these assumptions for granted and experience tells us they are true. But it seems to me we need a more convincing demonstration of the economy of projective techniques and diagnostic testing generally both in clinical practice and research as compared with the more direct interview, observation, and molar experimental methods. For example, in a survey by Odum "the time required to complete a Rorschach examination was estimated by 166 Rorschach workers." (9) The average was a little more than 4 hours, the range from less than 2 to over 8 hours. If one uses a battery of tests, total time is even greater. In clinical work I sometimes wonder about the sheer economics of hours put into testing, recording, review-

ing, pondering, interpreting results, and reporting conclusions. I wonder about the worthwhileness of such heavy time investment if the most that can be said of a test's contribution is that its results correlate significantly with findings from direct sources. Why work so long, so hard and so inferentially to duplicate data equally or more readily available by direct observation and inquiry?

As for the assumption that projective techniques yield material otherwise inaccessible during normal states of conscious censorship, how can we test and prove this? Schafer (10) and Bellak (1) suggest similar approaches. Schafer describes the Rorschach response process as a balance of progressive, adaptive and creative forces versus regressive, autistic trends, shifting among psychic levels along a "dream-percept continuum" of dreaming, day-dreaming, purposeful visualizing and normal perceiving. Bellak also deals with the question of levels of consciousness to which projective techniques penetrate. His continuum includes the dream, hypnagogic states, preconscious fantasy, day dream, free association, artistic creation, and a separate category of projective test responses. Bellak also refers to experimental applications of projective techniques during hypnotic or less than fully conscious states. The child's psychic life is less complex than the adult's. His verbal, graphic and dream expressions are less disguised, and the projected representations of his inner life are more patently understandable and verifiable.

As in the clinical case study method, so in research, we don't know what to do with test results which are not compatible with the criterion measure. For example, Crandall described a Fels study of maternal behavior in which mother's self-ratings correlated positively and, in many relationships, significantly with ratings by home visitors. But, "in none of the relationships was as much as half of the vari-

ance held in common between the two ratings . . . Self-reported maternal behavior was not the same as observed maternal behavior." How should we construe such differences between subjects' self-perceptions and objective ratings of behavior presumably emanating from the subjects' core self-concepts? Rating scales and simpler projective tests are good first steps. But I think those complex techniques, like the Rorschach, which use the method of inquiry for pursuing and elucidating the projections in the test point the path to closer correlations between subjective psychological experience and objective interpretation of underlying dynamic processes. Inquiry into responses provides a means of deeper penetration into the subject's psychic life, leaving less to speculation and inferential interpretation via score formulas and selected test "signs". Predictors of the sign, equation, or formula type to which projective tests are commonly reduced are usually too empirical and unnecessarily "blind". At their very best these predictive devices enable us only very mechanically to foretell an end product. They tell us nothing about intervening processes or developmental evolutions through which the predicted end states are attained.

Inquiry is, of course, standard procedure in the Rorschach, Word Association and other tests. Following Bettelheim (2), Luborsky (7) recently described the benefits of inquiry with the Thematic Apperception Test by asking subjects for self-interpretations of their TAT stories. Holt and Luborsky (5) found this a useful research method in assessing the psychological-mindedness of applicants to the Menninger School of Psychiatry. I have regarded self-interpretations of TAT stories as presumptive work-samples of a patient's capacity to recognize and understand expressions of his own psychic processes, and have used this clinically as a method of appraising amenability to psychotherapy. Psychoanalysts rarely interpret dreams

without the dreamer's free-associations to the dream and extensive knowledge about his life and personality. Why do psychologists presume to make important interpretations of the manifest forms and contents of projective tests without further inquiry into latent meanings? The introspective method was long ago abandoned by psychology in its growth toward objective science. Coupled with the projective technique, introspection appears once again to be gaining respectability as a method of personality investigation. I suggest that, as psychologists find further freedom from their test ties and make more first hand examinations of psychic phenomena, new dimensions will be added to projective techniques.

Both Crandall and Hoffman and Sigel have referred to the problem of defining what is normal. If one considers projective responses as products at a point in time of a continuous and pre-existing personality which at an earlier developmental period was also a pre-rational personality, then one must expect to find in the projective material residuals and resurgences of, as well as regressions to, pre-logical thought forms and immature affect modes to some extent as characteristic of normal mentation, emotion, and action. The question is to what extent may these occur and with what degree of resilience should the child maintain the developmentally more mature and age-appropriate modes. The answer calls for further research in the borderland between the rational and irrational, the logical and prelogical, the mature and the infantile, the adaptive and the maladaptive.

Perhaps as many serious behavior and personality problems are abided and lived with today in homes, schools and communities as are brought to clinics for study and treatment. What does this mean when in research normal is defined in dichotomized terms of non-clinical versus

clinical populations, and when experimental and control groups are chosen by this broad division? One small operational way to clarify and delimit the concept of the normal for certain research purposes is to use the projective technique in a self-limiting and self-norming manner. For example, there is sufficient knowledge and agreement about what constitutes a pathological response on the Rorschach. When such responses abound, pathological protocols may be eliminated. Thus, one can *a priori* preclude extremely deviant cases from the research population. As one who tried this procedure in a predictive Rorschach study with adults, (6) I can tell you that it makes the task of valid differentiation and reliable prediction enormously more difficult when you pre-experimentally eliminate one end of your population distribution. This kind of precaution in a research design is not without precedent. It is ordinarily done in defining the limits of one's investigation. Usually, however, the delimitation is according to external criteria and not, as I am proposing, in terms of the research instrument itself. This is a procedure of purifying the research population by screening out from the start those subjects identified by the projective technique itself as abnormal, or even suspect, depending on how far one wants to refine the group. In this way the projective technique does double duty, first as an initial screening device, and thereafter as a modality of the research proper. If this is done, we may not only be in a better position to examine how normal child development progresses when viewed through projective techniques, but

we may also more intensively establish the descriptive, discriminating, and predictive powers of the projective technique in its own self-defined range of normal functioning.

In concluding these general comments, I want to thank Drs. Crandall, Hoffman and Sigel, and Ricciutti for the stimulation of their thinking. In the open discussion later I'll comment more specifically on the fine points of their papers.

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The Rorschachs of Selected Groups of Children In Comparison with Published Norms: I

The Effect of Mild Hearing Defects On Rorschach Performance

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As part of a study of the educational adjustment and personality development of hard of hearing children undertaken by the Department of Child Study of Vassar College under a grant from the Estate of Lester N. Hofheimer, a group of children with slight to moderate hearing defects was selected for study (2) on the basis of a screening test of hearing applied to several grades in the Poughkeepsie public school system.¹ For various purposes in the overall study a control group with normal hearing was established in which each member was matched to one of the experimental group for age, sex, school and neighborhood and socio-economic status. The present report deals with an analysis of the Rorschach records of children with hearing defects in comparison with the records of their matched controls.²

SUBJECTS

For the analysis of the Rorschach characteristics of children with defective hearing, ten matched pairs of children were used. Table I indicates the age, sex and estimated socio-economic status³ of the ten children with

hearing defects (Group A) and their matched controls (Group B) and an estimate of the degree of hearing loss of the experimental subjects.

An additional group, A', of six children with severe hearing handicaps was also studied. Because there is only a small number of such children, varying in age from three to eight, no attempt is made to compare them with the other children in statistical terms.

PROCEDURE AND FINDINGS

The Rorschach protocols of these children were submitted for analysis to Bruno Klopfer,⁴ at first without designation to indicate which children were known to have hearing defects in order not to bias the scoring and interpretation. It proved impossible to distinguish the children with and without mild to moderate hearing losses by "blind" examination of the Rorschachs.

The proper designations of normal

father (or mother) as follows: I. Professional; II. Semi-professional, large business, important managerial; III. Skilled labor, small business, minor managerial; IV. Semi-skilled labor; V. Unskilled labor.

¹ Grateful acknowledgment is made to the Superintendent of Schools, Fox D. Holden, and the then Assistant to the Superintendent, Carl E. Lewis, and the principals and teachers who cooperated in the study.

² The ten "best" cases of hearing loss chosen from a larger group of 16 on the basis of presence of binaural hearing loss substantiated by pathological medical evidence, and duration over a period of three years as evidenced by repeated audiometric tests.

³ Estimate based on occupational rating of

⁴ The administrators of the Rorschachs were all trained by Klopfer or his students. In addition to the authors, these included Lucy Bodlander and Annette Porter. Appreciation is expressed for their assistance. The Rorschachs were collected in the period 1947-1950. Dr. Klopfer arranged for their analysis by Mrs. Winifred B. Lucas and the results of these analyses were discussed in conferences with Dr. Klopfer and one or both of the authors. Grateful acknowledgment is made to Mrs. Lucas and Dr. Klopfer for their interest and generous cooperation.

TABLE I—Age, Sex, Socio-Economic Status and Degree of Hearing Loss for the Groups Studied

	Group A Defective Hearing	Group B Controls
N.....	10	10
CA.....	6:4-13:0 (eight, 8:0-11:5)	7:3-12:8 (eight, 7:3-11:6)
Sex		
Boys.....	5	5
Girls.....	5	5
Occup. rating		
I.....	1	1
II.....	1	1
III.....	3	3
IV.....	4	2
V.....	2	3
AMA rating.....	3.6-47.3%	Normal
of hearing loss	Mdn. 6.8%	

or impaired hearing were then submitted to the Rorschach analysts and they attempted to find, empirically, common attributes in the Rorschachs of the children with hearing defects which would differentiate them from the control children. A comparison of differences in mean scores between two groups was made for each of twenty-four Rorschach scoring categories. For those differences which on inspection seemed possibly significant the *t* test of significance for the difference between correlated means was computed (3, p. 225-226). The Rorschachs of the children with mild to moderate hearing defects showed no statistically significant differences from those of the children with normal hearing.

On the assumption that the hearing loss might, nonetheless, impose deprivations which would influence personality and which might be evident in terms of a cluster of Rorschach traits, a "deprivation syndrome" was set up by Klopfer and Lucas and the groups compared in terms of its incidence. It should be added that before the analysts had been informed of the designation of "normal" or "impaired" hearing they had found it possible to characterize a considerable number of the children as showing such a syndrome. This syndrome consists of a cluster of the

following Rorschach characteristics:

- (1) "Blunting of affect": this has in common with what I usually term "bland discomfort in the presence of color affect" an absence of marked signs of stimulation. It does not exclude such intensive reactions as *blood* or *fire*, but where these occur they are not given in the cold-blooded, matter-of-fact way which characterizes bland affect. However, blunted affect lacks the expression of discomfort or excitement which is typical for the more normal child.
- (2) Erratic form-level: marked variation in definiteness and adequacy of the use of form. (This was especially conspicuous in the records of the more intelligent children.)
- (3) Emotional retardation: the use of color is approximately two years below the differentiation typical for the child's age.⁵

The dynamics which were assumed to underlie this deprivation pattern were the effects of the handicap in communication, which tends to isolate the child with defective hearing, in combination with the compensatory attention which such a child might get because of his handicap. This combination might produce the "blunting of affect" (instead of a "flattening of affect," which isolation itself would bring about). This is in

⁵ Quotation from summary of the Rorschach analyses received from Dr. Klopfer.

contrast to the normal differentiation which unhampered communication would produce. The same combination might well produce an uneven use of intelligence in the more able children.

After the hypothesis of the deprivation syndrome was set up, the Rorschach records of the children in Groups A and B were examined for the presence or absence of the three characteristics above. It was found impossible to distinguish the children with defective hearing from their normal controls in a more than chance fashion on the basis of the deprivation cluster of characteristics. For instance, in the ten matched pairs reported in this article, 6 children of Group A showed none of the syndrome and 4 the complete syndrome. Of Group B, 3 showed none, 2 a partial pattern (two characteristics), and 2 the complete syndrome.

It is possible that the hearing losses of most of the children in Group A were too slight to result in the hypothesized effect of the deprivation syndrome. However, when the records of the 4 children in Group A with losses of 25% or more and those of the 6 children in Group A' with severe losses (A.M.A. ratings of losses of 60% or more) (1, p. 158) were examined, three of the records showed none of the characteristics of the deprivation syndrome and 3 showed a partial pattern (two characteristics). Similarly, when the data were examined on the interpretative level by the Rorschach analysts, estimates made of such characteristics as "psycho-sexual level," "degree of anxiety," "intellectual functioning and potential," and "general adjustment," yielded no differentiation of the two groups.

CONCLUSIONS

The conclusion from these exam-

inations of our data was that in this small sampling no single Rorschach factor or pattern of factors, on the basis either of scoring or interpretative analysis, could be found which would consistently differentiate the children with defective hearing from the children with normal hearing. Nor did the Rorschach evidence of disturbances in the personalities of the severely handicapped group of six children differ in quality and quantity from those in the mild to moderately defective hearing group or the control group.

With reference to this finding, it is interesting to consider that had the Rorschachs of the children with hearing defects been compared only with expected norms, and no control group employed, the investigators would have been badly misled; it would have appeared that the "deprivation pattern" was characteristic of children with hearing defects. That is, it was only through the use of matched controls that it became evident that not only the experimental subjects but also the normal control subjects differed from "normals." Hence it seemed reasonable to examine a new hypothesis: namely, that since both groups were of low socio-economic status, the Rorschach was sensitive to personality concomitants of socio-economic status. Part II will describe the testing of this hypothesis.

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The Rorschachs of Selected Groups of Children In Comparison with Published Norms: II

The Effect of Socio-Economic Status On Rorschach Performance

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Part I (6) reported a study of the Rorschach records of ten school-aged children with hearing defects compared with those of their matched controls. The conclusion of the study was that in these records no single factor or pattern of factors, on the basis either of scoring or interpretative analysis, consistently differentiated the two groups. Both groups, however, showed a high incidence of what was called a "deprivation syndrome." Since this syndrome was found in both groups it appeared that it might be associated with low socio-economic status rather than with hearing loss. It seemed important to set up a study to test the hypothesis that the Rorschach was sensitive to personality concomitants of socio-economic status, since the results of such a study might alter the general acceptance of published age norms. The present report deals with the testing of this hypothesis.

Since the concept of the "deprivation syndrome" used in Part I seemed too diffuse and qualitative to permit further analysis, the present comparison is based on the frequencies of occurrence of various Rorschach scores.

SUBJECTS

To test the above hypothesis we gathered a group of children of low socio-economic status for comparison with published norms. Eight of the ten cases of children with defective hearing described in the previous study were pooled with their normal hearing matched controls, omitting two pairs of children of high socio-

economic status. To this group were added seventeen more children, some of them normally hearing children, others children with only marginal or doubtful losses or mild losses in the high frequencies only. All thirty-three children were of low socio-economic status (Table I).

PROCEDURES AND FINDINGS

The Rorschach protocols of twenty-five of these children, as described in Part I, had been submitted for analysis to Bruno Klopfer (6, p. 273). Eight other protocols not submitted to Dr. Klopfer were scored by comparable procedures. A recent publication by Ames *et al* (1) provided norms for children at each year of age for ready comparison with these children. Fortunately the Ames publication contained a description of the socio-economic status of her groups, an examination of which made it obvious that the Ames norms actually were derived from children whose homes were predominantly middle- or upper-class. Our experimental group (E-group) was essentially lower-class, with very little overlap between Ames' and ours.¹

¹ It will be noted in Table I that for ten cases of the E-group the occupational rating is III. However, for more than half of these children there were present depressing factors in the home situation which made their homes comparable to those with ratings IV and V, e.g., one family of a skilled mechanic was considered as a "typical welfare family" by social agencies; dirty, ill-managed, etc. Another skilled mechanic was a drunkard with court records for disorderly behavior, etc. All but one of these ten families lived in the poorest section of the city. For these

Thus the comparison of this E-group with the Ames norms provides the basis for a study of socio-economic influences on the Rorschach.

Inspection showed that the Rorschach data for the E-group departed considerably from the Ames norms. To emphasize this disparity the numbers of the E-group children who were at or above the Ames 75th percentile or at or below the Ames 25th percentile (for corresponding age) were found in each of the scoring categories considered by Ames and her co-workers.² Table II presents these figures with the results of the analysis of the statistical significance of the differences as tested by the use of chi-square, using the Yates correction for continuity because of the smallness of the samples involved (7, p. 278). It is immediately obvious that the E-group children deviate from the Ames norms in about half the scoring categories. Thus, of the 33 children in the E-group, 19 score at or above the Ames 75th percentile for FM, 17 for FC, 19 for R, all differences being statistically significant at less than the .01 level. Of the 33 children, 14 score at or above the 75th percentile for FC, 15 for P and 15 for A%, differences significant beyond the .05 level of confidence. Examination of the number of children scoring at or below the 25th percentile gives other highly significant deviations from the Ames norms. Of the 33 children in the E-group, 18 scored at or below the 25th percentile for W%, 15 for Dd%, and 15 for CF. In addition, only one child scored at or below the 25th percentile for *m*. All of

these differences were statistically significant. It will be noted that CF and possibly P show a piling up of responses in the E-group both *below* the Ames 25th percentile and *above* the 75th at the expense of the middle range.

It will also be noted that not all of these differences lie in the "expected"

TABLE I. E Group
Low socio-economic status

N.....	33
CA.....	6:3-11:6
Sex	
Boys.....	18
Girls.....	15
Occup. rating	
I.....	0
II.....	0
III.....	10
IV.....	12
V.....	11

TABLE II. Comparison of the E group
with Ames Norms Rorschach Scores*

	N above Ames 75th percentile score	X ²	p
M.....	11	1.215	.....
FM.....	19	16.97	<.01
m.....	8		.....
FC.....	17	11.00	<.01
CF.....	14	4.45	<.05
C.....	6		.....
W%.....	4	2.27	.....
D%.....	13	2.92	.09
Dd%.....	3		.....
F%.....	10		.....
P.....	15	5.90	.015
A%.....	15	5.90	.015
R.....	19	16.97	<.01
	N below 25th percentile score	X ²	p
M.....	5		.....
FM.....	0	9.70	<.01
m.....	1		<.01
FC.....	0	9.70	<.01
CF.....	15	6.30	<.05
C.....	0	9.70	<.01
W%.....	18	13.82	<.01
D%.....	7		.....
Dd%.....	15	6.30	<.05
F%.....	6		.....
P.....	12	1.71	<.20
A%.....	6		.....
R.....	3	3.64	.06

* E group, N = 33
Ames, N = 50 at each age level.

reasons, the contrast between the experimental group and the Ames group is more marked than Table I might suggest. Three-fourths of the Ames children came from homes rating as I or II on a similar occupational rating scale.

² Unfortunately, Ames *et al* instead of using one of the scoring systems now standard in the U. S. have introduced the modifications of Loosli-Usteri. Because this involves considerable difference in shading scores, those categories are omitted.

TABLE III. Comparison of Children Over and Under
11 Years of Age for Ames Norms

	M	FM	CF	W%	P	A%
	Above 75% percentile					
Age 11.....	0%	43%	28%	14%	43%	56%
Age under 11.....	42%	62%	45%	11%	45%	42%
	Below 25% percentile					
Age 11.....	28%	.....	71%	56%	28%	14%
Age under 11.....	11%	.....	38%	54%	38%	19%

TABLE IV. Comparison of Rorschach
Norms for 8-year-old Children
(Mean scores)

	Ames	Carlson	E group
N	50	100	10
W%.....	55	35.88	40.9
D%.....	37	51.3	41.7
R.....	15.86	20.13	18.8
P%.....	24	22.56	16.8
A%.....	45	46.66	45.7

direction of deprivation, and impoverishment: there is also evidence of earlier maturity in the Poughkeepsie sample. A comparison of the E-group children who were eleven years or older (7 children) was made with those under eleven (26 children) for those categories whose scoring deviated markedly from the Ames norms (Table III). There was no evidence that the suggestion of "earlier maturity" was due to the weight of the scores of the seven children who were over eleven years of age.

Before it is possible to discuss these differences it is necessary to examine the distinctions between the groups more closely. As noted previously, three-fourths of the Ames children came from families in the professional and managerial groups rated as I and II, while most of the Poughkeepsie children in the E-group came from families rated IV and V, semi-skilled and unskilled labor. There would appear to be, then, a clear-cut comparison of socio-economic differences between the E group and the Ames groups. By implication, we cannot then assume that the Ames figures are truly normative. This raises the important question for future Rorschach research as to whether it is better to obscure these differences by combin-

ing groups of different socio-economic status or to keep the norms for each group separate. Ames points out that the one study to date of the socio-economic differences as related to Rorschach scores (4) found socio-economic level not significantly related to Rorschach scores but that Cronbach has suggested that more appropriate statistical treatment of the data would have revealed several significant differences (1, p. 16). There may well be other differences between the Ames group and the sample of Poughkeepsie children, but there is no evidence that Ames' or the Poughkeepsie group is atypical in any respect other than socio-economic status (especially since it is clear from the data of Part I of this study that the presence of children with hearing defects made no significant difference as such).

With the thought that some light might be thrown on this issue by comparing some of the data for the E group and from the Ames tables with other normative studies, scores for the ten 8-year-olds in the E group were compared with Carlson's norms (2) for 8-year-olds. Table IV contains the results of this comparison of the E group, the Ames and the Carlson norms for five scoring categories. For three of these categories, W%, D%, and R, the E group children occupy a midway position between the Ames and Carlson norms, with the Carlson norms representing a wider sampling of socio-economic levels than Ames's. At the request of the authors of this article, Carlson made a more detailed analysis of responses of her children from different socio-economic levels. Using the chi-square technique for

differences between a 'high' group (rating I-III) and 'low' (IV-V), Carlson found a very significant difference for CF% and a result approaching statistical significance ($P=.10$) for FC%, in both cases the children of higher socio-economic status utilizing more color. Using a different dichotomy (I, II vs. III, IV, V) she found children of the lower levels gave significantly more A responses. None of the other scores differentiated between socio-economic levels regardless of the grouping employed. Differences may have been obscured by the fact that Carlson's ratings of socio-economic status were made on the basis of rental indices rather than parental occupation.³

CONCLUSIONS

A clear-cut difference between Ames' high socio-economic group and our low socio-economic group is evident. The comparison with the Carlson data does little to clarify the problem of interpretation of these findings, but does reinforce our question regarding the validity of the Ames norms for children from all levels of society and our suggestion that we must obtain appropriate norms for children of various socio-economic levels. In view of the discrepancies in the three sets of findings and in view of the relatively small samples used for all three sets of data, it seems prudent to eschew the temptation to speculate now over the psychological pressures related to low socio-economic status.

(such as earlier responsibility and the need to assume independence, as well as environmental deprivation factors) which might account for the striking apparent differences between our E-group and the Ames group. The Rorschach technique may prove to be a very accessible and insight-revealing method for the study of the psychological impact of socio-economic factors, but at this point it is obvious that what is needed is much more Rorschach material on large, well-defined samples of children differing in socio-economic status.

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³ From personal correspondence of the authors with Rae Carlson, September 1952. Grateful acknowledgment is made for her interest and cooperation in re-examining her data.

A Factor Analysis of Rorschach Determinants

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Since 1947, a number of factor analyses of the Rorschach have been published. They may be considered as of three general types, according to whether their major concern has been with content, diagnostic signs, or scoring categories. The only factor analysis of diagnostic signs is that of Hughes (5), who employed a combination of psychoneurotic, organic, and schizophrenic signs. Two other early studies, by Hsü (4) and by Wittenborn (10), dealt with content. Wittenborn secured responses to the Harrower-Erickson check list, analyzed 18 of the items on the list, and attempted to draw generalizations regarding the unitariness of the major determinant categories.

Hsü's study, however, is of greater interest at the moment, since it foreshadows a finding common to all subsequent factor analyses of formal scoring categories. Very limited generalizations from Hsü's data are warranted, because of the special circumstances of this study. Hsü used only the first card of the test and secured responses—evidently at a Halloween party—from 76 children, all of whom were clients at a clinic. The prominence of such a response as "pumpkin" should especially suggest due caution in interpreting the data. Hsü analyzed 15 scores, including total time, number of words, number of nouns, number of adjectives, number of verbs, use of numbers, and nine general content categories. It is the first rotated factor that is of interest. In view of its high loadings for scores obviously related to the length of the protocol, Hsü interprets it as a factor involving facility in using words and associating to the stimulus material. In reference to this study, Adcock (1) speaks of the factor as one of "fluency."

The major factor analyses of conventional scoring categories have been those of Adcock (1), Cox (2), Sen (7), Williams and Lawrence (8, 9), and Wittenborn (11, 12). These studies have involved varying selections of scores and widely different types of subjects, but they have one major finding in common. Each has turned up a "productivity" or "fluency" factor. Some psychologists have been impressed with the persistence of this factor, as though it had some special psychological significance. But its primary significance probably lies in its inevitability in the factor analysis of a matrix containing the spurious correlations of a set of systematically interrelated scores. *R* (the number of responses in the protocol) invariably has a high loading on some such factor. Where determinant scores have been used, *F* has had the highest loading. Of the location scores, the detail scores tend to have high loadings, whether a simple summative score or a percentage score is used, since few subjects can give many suitable whole responses, and the more one breaks up the stimulus perceptually, the more possibilities there are for discrete responses.

Adcock (1) found such a factor for a matrix composed almost entirely of percentage and ratio scores—the usual part-whole correlations being thus avoided. He made two analyses, one for the responses of 88 native children of Cook Island and one for the responses of 30 New Zealand children. The results for the two groups are surprisingly consistent. Three factors show high loadings for roughly the same variables. Adcock refers to the factors as fluency (with high positive loadings for *R*, *Dr*%, and *S*), phantasy or introversion (with loadings for

$M:C$ and $H\%$), and intelligence or "practical common sense" ($D\%$, $H\%$, R , and $Dr\%$ having high loadings). A fourth factor shows different patterns of loadings in the two cultures, but Adcock felt that a "constriction" factor might be involved in both cases.

Sen (7) found somewhat similar factors in a factor analysis of 36 scoring categories for responses obtained from a sample of 100 Indian students. Tetrachoric correlations were analyzed by Burt's method of simple summation, and three factors were found. Sen felt that these involved respectively fluency of association, the ability to see relations, and fantasy thinking as against concrete and practical thinking. Re-examining Sen's findings, however, Eysenck (3) felt that the third factor might better be considered a "neuroticism" factor, while the second might be considered an "intelligence" factor.

Productivity (or "fluency"), normal adjustment (as against neuroticism), and intelligence factors were also found by Cox (2), who studied the responses of 60 normal boys, selected from school, and 60 psychoneurotic boys, who attended a clinic. The school-clinic dichotomy and Raven IQ were included among the scores as reference variables. The factor analyses of scores done by Wittenborn (11, 12), however, are probably of more far-reaching implications, for separate analyses were made for a group of normals (Yale undergraduates) and for a group of neuropsychiatric patients, using the same set of Klopfer scoring categories. These twin studies permit a comparison that previous studies have not permitted. There are factors that may relate to the level of mental health, but it is also evident that the level of mental health of the group studied will influence the factorial composition of the scores. There is, to be sure, a "productivity" factor for each group, with high loadings for R , D , Dd , d , and F , but even here there are important

differences. For the normal group, M and FM have high loadings on this factor; for the psychiatric group, m has a high loading, but the loadings for M and FM are low. For the normals, a factor representing a "low order of perceptual control" was predicted and it materialized, with high loadings for W , CF , C , c , and K . This and a similar factor found for the psychiatric group may correspond to the neuroticism factor of Sen and Cox. In both groups, there is something that might be called an "originality" factor, but there are marked differences. A high loading for M in the normal group suggests a factor akin to creativity, while Wittenborn feels that the prominent joint loadings for S and O in the psychiatric group are a function of the fantastic originals of the psychotic subjects. In the psychiatric group, D , M , FM , FK , C' , FC , and R form a fourth factor. In the normal group, a possible fourth factor is formed by P , O , K , C , and c .

It may be noted in passing that in the normal study, Wittenborn made an issue of the fact that the factorial composition of FC was more like that of M than like that of CF or C . He felt that the discrepancies among the color categories and among the movement scores suggested an incorrect emphasis in present scoring practices. Wittenborn seems to believe, however, that Rorschach theory assumes more factorial unity for the movement scoring categories and for the color scoring categories than it does. Were not at least some factorial differences expected, the distinctions between FC , CF , and C and between M , FM , and m would not be made. On the other hand, there are certainly reasons, from the standpoint of Rorschach theory, to expect a relationship between M and FC and, for that matter, between K , c , and C .

Wittenborn's findings were generally confirmed in a study by Williams and Lawrence (8), who sought to replicate his study of psychiatric patients, drawing subjects from a different hos-

pital population. The clearest duplication is in a "productivity" factor. It again shows high loadings for R , D , d , and F , though a few changes emerge in loadings for other scores. FC again shows a kinship with the movement scores, which in this study show jointly high loadings on a "movement" factor. A factor of low "perceptual control" again appears, with high loadings for c , CF , and C . A distinct intelligence factor also appears in the data of Williams and Lawrence, who included two Wechsler-Bellevue scores—Verbal IQ and Performance IQ—in their matrix. A fifth factor shows high loadings for Fc and FK .

In a more recent study, Williams and Lawrence (9) have added MMPI variables to those used in the above study. Once again, there is a factor which is primarily a function of Rorschach productivity. Of the remaining three factors extracted, two show an overlap of Rorschach and MMPI variables, while the other is primarily a function of certain MMPI variables alone.

PROBLEM AND METHOD

It has been noted that all previous factor analyses of Rorschach scores have found a productivity factor. This factor seems to be a necessary product of the experimental interdependence of certain scoring categories. R especially may be expected to correlate spuriously with many other scores because of the manner in which the scoring system has been constructed. The correlation of R with any location or determinant score is actually a part-whole correlation, since the sum of either the primary determinant scores or of the location scores will equal R . Similarly, P and O are functions of protocol length, since their size is limited by the total number of responses and longer protocols present more opportunity for popular and original responses to occur. On a similar basis, certain specific location and determinant scores may be expected to correlate especially highly

with R , so that even percentage scores will show certain systematic correlation effects. Such percentage scores are also unusable for factor analysis because of their ipsative nature. At any rate, the greater the protocol length in general, the greater the proportion of small and unusual details. For it is easier to give many responses if the subject feels free to use any part of the inkblot to the exclusion of the remainder for a given response. Integrating various parts of the blot in a single concept not only reduces the number of discrete responses to be tabulated but also alters the location scoring in the direction of W . The proportion of form-determined responses will be a function of R for similar reasons, for an attempt to integrate the various determinant potentialities of the blot will not only tend to produce a determinant scoring other than F but will also restrict the number of responses that a subject can make. We may note, too, that the smaller the area to which a concept is confined, the less the possibility for a determinant scoring other than F . The derivation of determinant and location scores from the same set of responses is, of course, a source of spurious correlation in itself. This is not to deny that the joint occurrence of high R , high $F\%$, and high d and $Dd\%$ is devoid of psychological significance, for it is such an occurrence that one expects for certain types of subjects. The less common occurrence of high R with, say, high $W\%$ and a predominance of m responses, which is far less common because the nature of the test militates against the occurrence, is likely to be of even greater significance.

For the present study, it was assumed that relatively little experimental interdependence should be present in a matrix composed entirely of determinant scores, since if only primary determinants are used, no response will contribute to more than one score. An experimental ingredient tending to generate negative cor-

TABLE I—Intercorrelations of Rorschach Determinants (from Wittenborn)

Symbol	Variable No.	1	2	3	4	5	6	7	8	9	10	11
M.....	1											
FM.....	2	36										
m.....	3	38	38									
K.....	4	27	28	43								
FK.....	5	15	20	24	41							
F.....	6	44	29	20	15	20						
Fc.....	7	58	33	45	35	15	46					
c.....	8	11	14	18	31	19	11	19				
C'.....	9	53	35	47	31	11	38	55	08			
FC.....	10	34	36	56	18	03	31	57	-08	46		
CF.....	11	-11	-03	11	35	29	18	12	25	09	13	
C.....	12	-02	08	10	26	27	04	10	26	11	18	24

relations will remain, however, in so far as a choice exists between two determinant possibilities in the production of a response or in the scoring of primary, as against secondary, determinants. For example, what is essentially a form response ("two men" on card III) may by a slight embellishment, according to the whim of the subject, become a movement response ("two men lifting a piece of furniture"). In the Klopfer scoring system, and generally in others as well, the response will be scored *M*, though form is theoretically the primary determinant. In terms of Rorschach theory, such experimental interdependence of determinant scores should not exist (to the extent that the number of responses is not limited), for scoring is ideally made in terms of the one process by which the percept is created (barring a simultaneous arousal of engrams), and no embellishment of the response should alter the primary determinant score assigned by an omniscient Rorschach examiner. The practical demands of scoring dictate a somewhat different situation. The experimental interdependence of determinant scores in the usual methods of administration is not so great as it would be if a fixed limit were placed on the number of responses, but the set of the subject can be expected to impose a sort of variable limit. Generally, the more responses a subject has given to a card, the less compulsion he may be expected to have to give more. To this extent, the

production of any response to a given card will make any other possible response less likely to occur. But this cannot be considered a serious source of interdependence.

On the other hand, individual differences in total number of responses may be considered a source of positive correlations and may account in large part for the generally positive trend seen in the correlation matrix (Table I). To the extent that the relative size of certain determinant scores (considered as a proportion of the sum of determinant scores) varies systematically with the total number of responses, these scores will tend to correlate especially highly among themselves. If the relative size of each determinant score were a constant for all subjects and all protocol lengths, of course, all determinant scores would correlate perfectly with one another and with the total number of responses in the protocol. Independence of protocol length and relative size of specific determinant scores would perhaps be the desired state of affairs, for then all correlations between determinant scores would be equally, but only slightly spurious. Since this situation is not the expected one, one might still expect some sort of productivity factor with high loadings for scores systematically related to protocol length.

For the present study, the writer sought a correlation matrix for Klopfer determinant scores for a group of normal subjects. One of Wittenborn's

studies (11) provided the desired data. The subjects were 92 Yale undergraduates. The intercorrelations, which are shown in Table I, were selected from Wittenborn's matrix for the following determinant scores: M , FM , m , K , FK , F , Fc , c , C' , FC , CF , and C . These correspond to the summary scores ordinarily entered on the determinant profile (thus, m includes mF and Fm , K includes KF , c includes cF , and C' includes FC' and $C'F$) and include all such categories except k , for which an adequate number of responses was presumably lacking.

Seven factors were extracted by the centroid method, with the resulting loadings shown in Table II. The justification for extracting the seventh, and possibly the fifth and sixth as well, might be questioned, especially since a rather large r is needed for significance with a sample of only 92. All of the last three factors extracted, however, seemed to be of value in clearing up the factor structure, and all three gained variance in rotation. The fifth and sixth factors also seemed to become more meaningful in the course of rotation. The seventh, whose maximum loading is still only .31, remains rather ambiguous and may be considered a "residual" factor. The relatively small sample size, nevertheless, seriously limits the conclusions that we can justifiably draw from the factors. But to date, inadequate samples have been rather characteristic of factor analytic studies of Rorschach data.

The primary aim in rotation was to approximate simple structure. Positive manifold was sought when otherwise indifferent choices presented themselves, though there are no compelling psychological reasons for denying bipolar factors in the present realm of data. An attempt was made to evaluate possible rotations in terms of their psychological meaning, but the writer did not seek to duplicate Wittenborn's factors. He was guided rather by a general knowledge of the sorts of factors that had been found in several previous studies. Thus, there was some reason to expect factors of intelligence, fantasy or introversion, constriction, and neuroticism or low order of perceptual control.

RESULTS

An examination of Table III shows that positive manifold was virtually achieved for most of the factors. Only one negative loading, for CF on factor III', exceeds .20, and the loadings below this level may be regarded as not too significant. None of the obtained factors may properly be considered a "productivity" factor, so that one may conclude that restricting the correlation matrix to determinant scores has eliminated much of the spurious correlation. The communality for F is noticeably lower for the reduced matrix than it is for Wittenborn's matrix, as one might expect with the omission of R and the location scores. Of the determinants, F is the one that would have the highest

TABLE II—Centroid Factor Matrix

	I	II	III	IV	V	VI	VII	h^2
1 M	58	41	21	—25	06	—08	—17	66
2 FM	50	19	23	09	—22	—07	12	42
3 m	66	14	20	32	13	18	12	65
4 K	60	—32	21	07	19	11	—11	58
5 FK	43	—38	14	—06	—21	15	—18	44
6 F	52	18	—16	—38	—17	05	11	51
7 Fc	72	29	—12	—14	15	05	—05	66
8 c	33	—37	11	—11	17	—21	20	38
9 C'	65	31	—05	04	16	—11	—09	56
10 FC	58	39	—30	39	—07	20	06	78
11 CF	32	—46	—29	—04	08	24	09	47
12 C	31	—37	—16	17	—11	—20	—10	35

TABLE III—Rotated Factor Matrix

	I'	II'	III'	IV'	V'	VI'	VII'	h^2
1 M.....	22	-.05	43	60	23	02	-.01	65
2 FM.....	38	02	45	15	01	12	19	42
3 m.....	32	27	52	00	40	00	20	65
4 K.....	01	57	33	15	24	25	08	58
5 FK.....	13	55	16	18	-.17	18	02	44
6 F.....	35	07	00	54	05	00	31	51
7 Fc.....	36	14	20	50	45	02	13	66
8 c.....	-.15	21	09	10	10	44	30	37
9 C'.....	36	03	28	35	46	13	02	56
10 FC.....	72	10	16	-.02	44	-.16	09	78
11 CF.....	05	55	-.26	02	14	12	25	46
12 C.....	22	30	-.08	-.06	02	44	-.05	35

loading in a fluency or productivity factor, and it has a loading above .50 only on factor IV', to which such a meaning cannot readily be attributed.

Factor I' has only one high loading, for FC, and the remaining loadings above .30 are distributed among an assortment of variables — FM, m, F, Fc, and C'. Any attempt to define this factor at present seems hazardous. It resembles a factor referred to by Wittenborn as one of intelligence or originality in having a high loading for FC. But such an interpretation seems unwarranted in view of the relatively low loading for M. It also resembles Wittenborn's productivity factor, despite a loading for F of only .35. This factor may, however, be largely a function of variables which tend to accompany length of protocol for subjects in the population studied.

Factor II' more closely resembles a factor which Wittenborn felt to involve a "low order of perceptual control." As in the case of Wittenborn's factor, the loadings for K, KF, and CF are highest, and there are positive loadings for m, c, and C as might be predicted. A further distinction, however, is suggested by the presence of factor VI', which has high loadings for c and C and lower ones for K, FK, and CF. This resembles another factor of Wittenborn to which he did not attempt to assign a definite interpretation. Both factors II' and VI' would seem to involve a low order of perceptual control, with slightly different manifestations of it arising from factorially distinct sources. Factor II', in

the light of Rorschach theory, might be specifically termed an "anxiety" factor. Anxiety would be reflected here in an evasion of the manifest form potentialities of the blot. Diffuse shading responses (K) become prominent. Where form is mentioned, it is likely to be vague and indefinite in character, suggesting feeble attempts to reconcile the form of the concept with that of the blot. Factor VI' suggests a low order of perceptual control that is more a function of uncontrolled emotional response to the environment. The sensitivity to texture suggested by c would seem to counter-indicate an evasion of manifest characteristics of the blot. The picture is rather that of a tendency to submit passively to emotional impulses aroused by environmental forces without taking active measures to control them. The emotionally stimulating characteristics of the blot thus absorb the subject's attention, and form tends to be disregarded.

Factor III' resembles factors that have been spoken of in terms of intelligence, originality, fantasy, and introversion. It differs slightly from any of Wittenborn's factors in having three prominent loadings for the three movement variables, though it accords with a factor found by Williams and Lawrence (8). It may be interpreted as an intratensive factor, such as might be predicted on the basis of the Rorschach rationale for the movement responses. It seems to reflect a general sensitivity to "inner stimuli," which thus exert an influence on the

perception of external stimuli.

M has further variance which appears on factor IV', where it is coupled with *F* and *Fc*. *M*, *F*, and *Fc* are all variables which have been associated with some sort of perceptual control, but the zero loading for *FC* counter-indicates an interpretation of a "general perceptual control" factor. The emphasis is rather on *M*, which may represent an "inner control." Taking the loadings for *F* and *Fc* into account, we might interpret the factor as one having to do with the constructive use of inner stimuli, or creativity. Another possibility is suggested by Klopfer's interpretation of texture responses in terms of a "need for contact." It may be that the high loading for *M* on factor IV' is attributable to the prevalence of human content in *M* responses. *M* and *Fc* in combination might reflect a sort of responsiveness to people which we could designate as *empathy*. We might use this term simply in the now popular sense of social responsiveness or integrate the idea with a kinesthetic concept of *empathy*, perhaps adopting Schachtel's (6) physiological rationale for the movement response.

Among the variables with high loadings on factor V', *Fc* is accompanied by *C'* and *FC*. This factor differs from VI' in having nearly zero loadings for *c* and *C*. It may thus represent a contrasting factor of controlled emotionality. Control in this case would be effected by well regulated emotional responses, reflected in the integration of color and texture with form, rather than by withdrawal or emotional constriction. There is little point in attempting to interpret factor VII', on which there are but two loadings as high as .30, these being for *F* and *c*. The remaining loadings are scattered among *FM*, *m*, *Fc*, and *CF*. It would be difficult to find a meaningful interpretation for a factor having a little variance on each of these particular variables. Factor VII' may be viewed as a residual factor.

SUMMARY

1. A factor analysis by the centroid method was performed on the matrix formed by the intercorrelations of twelve determinant scores selected from data provided in a previously published study of Wittenborn. The subjects of Wittenborn's study were 92 Yale undergraduates.

2. Seven factors were obtained, and rotation was attempted in the direction of simple structure.

3. A distinct productivity factor, such as has appeared in all previous factor analyses of the Rorschach is not evident, though factor I' may possibly have some significance of this sort. The lowered relative communality of *F*, in the present data as against Wittenborn's data, is interpreted as a consequence of the elimination of the most spurious correlations from the matrix.

4. Factors II' and VI' are interpreted as factors of low perceptual control, involving anxiety and passive submission to emotional impulses respectively. Factor III' is taken as evidence of an intratensive factor, involving a general sensitivity to inner stimuli. Interpretations of factor IV' are suggested in terms of "inner control" and *empathy*, while factor V' seems to involve an "outer control" or a controlled emotional responsiveness to the environment. The variance of factor VII' is probably in large part residual.

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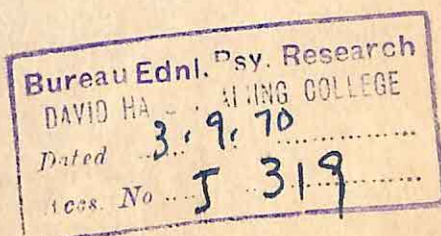
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Rorschach Productivity and Card Preferences as Influenced by Experimental Variation of Color and Shading¹

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This investigation introduces a new Rorschach research tool, one expressly designed to permit experimental investigation of various assumptions and hypotheses relating personality structure with responsiveness to color and shading. The tool is comprised of a total of nine achromatic and monochromatic sets of Rorschach cards, plus the original Rorschach, making up ten sets of 100 cards in all. Three sets are entirely achromatic, differing from each other only in degree of blackness. The range of blackness-intensity from the lightest to the darkest set is not great, although easily perceptible. The reason for the relatively narrow range of blackness is to avoid loss of shading-detail as the printing becomes either too light or too dark. The other six are monochromatic sets in the following colors: blue, green, yellow, orange-tan, brick, and red. These colors were selected as being most nearly like the colors on the original Rorschach chromatic cards. The sets were made by means of the Kodak Dye-Transfer process, the printing being done in monochrome colored dyes.² The idea of

constructing multi-colored sets of cards was put aside for the time being because of the technical difficulties presented. If the results obtained in experiments with the present series are sufficiently promising to warrant it, multichrome Rorschach variations may be constructed.

Problems

Although the present study was undertaken primarily to investigate the effect of experimental variation of color and shading on Rorschach card preference and productivity, the experimental design provided answers to the following questions:

1. Is Rorschach productivity, in terms of the number of responses elicited, significantly influenced by:

- a. variations in color and shading, irrespective of form?
- b. form, or card design, irrespective of color?
- c. subject, or person, irrespective of form, color and shading?
- d. interaction effects among color and shading, form and subject?

2. Is the pleasantness or preference value assigned to the cards significantly influenced by the variables indicated above?

3. Is there a relationship between pleasantness of the card and number of responses it elicits?

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² In making these prints the first step is to make normal black and white negatives. As in any photographic process, from these negatives a matrix is prepared which is a gelatine image film base. The image is in relief form so that the parts to be printed darkest in color are the thickest parts of the relief with the medium or in-between tones in somewhat lower relief. There is no gela-

tine present where no image is to be printed. The matrices are used much in the same manner as the photoengraver uses his metal plates to print from. A transfer of the image consists of soaking the matrix in the appropriate dye and then squeegeeing the matrix onto a specially prepared transfer paper. The image then consists of a heavy deposit of dye where the matrix relief was the thickest with proportionally less dye transfer as the relief was lowered.

Experimental Design

The subjects of the experiment were thirty Rorschach-naïve female college students, mostly nurses, who were taking an undergraduate psychology course with the UCLA University Extension. In order to facilitate the experiment, the students were seated in three rows, running ten seats across. Each student had a Harrower-Erickson booklet in which she entered and numbered the responses to each card. The use of the booklet was explained, and the customary instructions given. In addition, the students were requested to assign a pleasantness value on a five-point scale, ranging from minus 2 (very unpleasant) to plus 2 (very pleasant) to each card.

The ten cards were distributed to each student in the standard sequence for card design, but order of color and shading was randomized according to a 10 x 10 Latin Square design (Chart I) which appeared on the blackboard in front of the class. From the Chart it can be seen that Subject 1 received Card I in the original Rorschach set (A); Card II in dark black (B); Card III in blue (C), etc. Subject 2 received Card I in dark black (B); Card II in brick (G); etc. (The colors corresponding to the code letters are given in Tables I and II.)

Since the back of each card was coded to correspond to the Latin Square design, each student in the first row was able to receive the appropriate cards in proper order. Four proctors assisted in distributing the

cards to the students in the first row. The students had three minutes time for each card and turned the card face down to signify that they had finished. Most finished well within the three minutes. Those few who lagged behind were reminded to finish up after two and three-fourths minutes, and were allowed to finish even if they exceeded the time limit.

On the face of each card, at top center, was a small circle in pencil to show how the card was to be held. Those students who asked if they might turn the cards were informed that they could do so. At the end of three minutes, the students in the first row passed their cards directly to the students behind them, face down. They then asked for their next card by code number. These were handed to them by the proctors, face down. When all the cards were in proper place the signal to proceed was given. The students in the first row all began on Card II, those in the second row on Card I. This same procedure was followed until the students in the third (last) row had completed all ten cards. (It should be noted that the procedure involved a triple replication of the experimental design.) Upon completing the performance proper, the students went back and indicated the locations for their responses on the small black diagrams printed in the Harrower-Erickson booklets. They also indicated for each card whether the responses had been primarily influenced by shape, color, movement, or texture.

CHART I. Latin Square Design of Experiment

Subject	Card Sequence									
	I	II	III	IV	V	VI	VII	VIII	IX	X
1.....	A	B	C	D	E	F	G	H	I	J
2.....	B	G	A	E	H	C	F	I	J	D
3.....	C	H	J	G	F	B	E	A	D	I
4.....	D	A	I	J	J	E	C	B	F	H
5.....	E	F	H	I	I	G	A	D	B	C
6.....	F	E	B	J	D	I	J	G	H	A
7.....	G	I	F	C	A	D	H	J	C	E
8.....	H	C	I	F	G	J	D	E	A	B
9.....	I	J	D	A	C	H	B	F	E	G
10.....	J	D	E	H	B	A	I	C	G	F

TABLE I. Productivity Data By Card and By Color*

Color	Code	Card Sequence										Total
		I	II	III	IV	V	VI	VII	VIII	IX	X	
Standard Set.....	(A)	4:4:4	4:1:4	2:1:2	3:1:2	5:2:6	2:3:4	3:1:4	6:4:1	2:8:2	2:1:5	93
Blue.....	(C)	4:3:1	1:7:2	3:4:2	1:1:1	5:1:4	2:2:2	4:2:4	3:4:4	3:3:10	5:1:4	93
Green.....	(F)	2:2:2	6:2:4	3:1:11	2:8:3	5:3:2	4:1:2	2:1:3	4:2:3	4:1:2	4:3:4	96
Orange-Tan.....	(D)	5:1:3	3:3:3	4:2:5	4:3:3	1:1:2	4:3:10	2:4:1	5:2:4	5:3:3	3:2:3	97
Brick.....	(G)	6:2:9	1:1:1	6:2:4	5:2:1	2:5:3	5:1:3	3:1:1	1:1:3	4:2:5	7:1:5	93
Yellow.....	(E)	8:1:7	1:2:2	3:2:4	1:2:2	3:3:2	5:1:0	4:2:1	1:4:3	3:1:2	4:2:11	87
Red.....	(I)	3:1:4	4:1:8	1:8:2	3:1:1	5:2:3	1:1:2	2:2:3	1:1:2	4:2:2	5:2:2	79
Medium Black.....	(J)	3:2:4	2:2:6	6:2:1	5:2:5	3:1:2	2:6:2	1:2:4	3:1:10	1:1:1	5:2:3	90
Dark Black.....	(B)	1:1:1	3:3:3	1:3:3	3:1:8	4:4:3	4:1:1	4:1:3	3:1:2	5:2:6	1:9:3	88
Light Black.....	(H)	2:4:4	3:2:3	4:2:5	5:3:3	2:1:1	4:2:6	3:2:9	2:1:3	2:1:2	8:1:5	95
Total		98	88	99	85	86	86	79	85	92	113	911

* The three entries in each cell represent the performance of the three subjects.

TABLE II. Pleasantness Data By Card and By Color*

Color	Code	Card Sequence										Totals
		I	II	III	IV	V	VI	VII	VIII	IX	X	
Standard Set.....	(A)	+ #	+ +	0 #	+ -	= 0	0 +	+ 0	# -	# +	+ 0	+ 0
Blue.....	(C)	0 0	+ +	0 0	+ +	+ 0	+ 0	+ 0	0 0	0 0	0 0	12 5
Green.....	(F)	= 0	- 0	= 0	+ 0	+ 0	= 0	= 0	0 0	= 0	= 0	8 10
Orange-Tan.....	(D)	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	+ 0	0 0	0 0	+ 0	3 9
Brick.....	(G)	0 0	+ +	0 0	+ 0	+ 0	= 0	= 0	0 0	+ 0	+ 0	7 11
Yellow.....	(E)	+ 0	- 0	+ 0	+ 0	+ 0	= 0	= 0	0 0	+ 0	+ 0	6 15
Red.....	(I)	+ 0	+ 0	+ 0	+ 0	+ 0	= 0	= 0	0 0	+ 0	+ 0	8 10
Medium Black.....	(J)	= 0	+ 0	= 0	= 0	= 0	= 0	+ 0	+ 0	+ 0	+ 0	6 9
Dark Black.....	(B)	+ 0	+ 0	+ 0	+ 0	+ 0	= 0	= 0	0 0	+ 0	+ 0	5 10
Light Black.....	(H)	= 0	+ 0	= 0	+ 0	+ 0	= 0	+ 0	0 0	= 0	= 0	3 7
Totals.....		2 6	15 5	6 9	1 8	1 11	1 14	4 10	5 9	6 7	33 70	96

* A plus 2 rating is entered as #; a minus 2 as =.

TABLE III. Analysis of Variance Based on Productivity

Source of Variation	d.f.	S.S.	M. Square	F
Total.....	299	1191.00		
Interaction between persons and cards within a series.....	180	172.60	.96	
Persons within a series.....	20	654.50	32.72	34.00**
Forms.....	9	26.70	2.97	3.09**
Colors.....	9	6.00	.67	
Form and Color.....	81	331.20	4.09	4.26**

** Significant at beyond the .01 level.

Statistical Treatment

Since each of the 30 subjects received a complete set of ten color-randomized cards, there were 300 stimulus card presentations. Each presentation yielded content responses and a pleasantness rating. The number of responses and the pleasantness rating of each subject were separately entered in the appropriate cell of a Latin Square design and treated by analysis of variance.³ Tables I and II provide the card-by-color data for productivity, and for pleasantness, respectively.

The sums of squares of the 300 observations constituting the experiment were divided as follows: (a) Interaction between persons and cards within a color series. This sum of squares was used as basis for the error term, since the values involved may be looked upon as a random sample of a normally distributed variable. (b) Individual differences within a color series; (c) Cards; (d) Colors; (e) Interaction between cards and colors.

This mode of breakdown was followed both as regards the productivity variable and the pleasantness-unpleasantness rating. In the former we deal with the number of responses per card; in the latter, with a judgment on a 5-point scale relative to the affect evoked by a card. Whether the data gathered in the present experiment fulfill the requirements of normality is a moot question, since we have no evidence that Rorschach responses constitute a normal univ-

erse; this judgment is perhaps even more pertinent with respect to the ratings. Nonetheless, the findings of Norton (5) relative to the influence of deviations from normality and homoscedasticity on the values of F ratios, justify in some measure, at least, the use of the analysis of variance technique in this case. Both the productivity data and the rating scale data met the homogeneity of variance requirements.

Results

Productivity. Table III presents the analysis of variance based on productivity as defined in terms of the number of separate responses elicited.

As is to be expected, individual differences in productivity, even within a color series, give the largest source of variation. The individual Rorschach cards, regardless of color, also constitute a significant source of variation. (As will be noted in Table IV, our subjects gave the greatest number of responses to Card X, and the least, to Card VII. This is in consonance with clinical experience.) The interaction between forms and colors is also significant in influencing productivity but the colors alone, interestingly enough, are not.

Since productivity was found to be influenced significantly by card design, it was thought of interest to see which cards elicited most and which elicited least responses. The rank order of card productivity is presented in Table IV.

As might have been expected, Card X, with its relatively discrete large-detail areas, elicited the greatest number of responses entirely irrespective

³ All determinants, ratios, etc., can be analyzed similarly by entering the desired data in the appropriate cells.

TABLE IV. Rank Orders of Card Productivity

Card	Rank	Total Responses (N = 30 cases)
X.....	1	121
III, IX.....	2.5	104
I.....	4	98
II.....	5	97
VIII.....	6	96
V, VI.....	7.5	86
IV.....	9	85
VII.....	10	79

of color. In fact, in our data, Card X yielded a higher average number of responses on the achromatic series than on the chromatic series, although the partial confounding resulting from the experimental design make comparisons of the effects of chromatic versus achromatic series questionable. The same finding, it might be added, obtained for some of the other cards, especially cards IV, VI, and VII. On the other hand, cards I, III, and especially IX produced more responses on the chromatic series. But since these data are partially confounded by various improperly randomized interaction effects, they are presented as something which might be explored further, rather than as substantiated findings. At any rate, to get back to Table IV, Card X produced the greatest number of responses, followed by III and IX which were tied for second place. Card VII elicited the least number of responses, followed closely by IV, V and VI. It should be kept in mind that, although the cards which were variations of the standard chromatic cards in general produced most responses, whereas the

cards which were variations of the standard achromatic cards produced the least responses, it was not the presence or absence of color which determined this. Since each card appeared in each of the ten chromatic and achromatic versions, it was the design of the card irrespective of color and shading which influenced the number of responses. However, as Table III showed, although color *per se* is not significant, the interaction effect of color and card design is significant at a level beyond that of card design alone.

Pleasantness. Table V presents the analysis of variance based on affectivity ratings on a five-point scale.

It is notable that the only clearly significant source of variation in affectivity ratings was color. (This, perhaps, is consonant with our expectations derived from ordinary experience. As will be noted in Table VI, the best liked color series is the standard Rorschach and the least liked is the light black set.) Forms barely missed significance at the .05 level. Perhaps the most startling thing from a psychological point of view is the lack of significance of individual differences within a color series in influencing affectivity ratings.

Since pleasantness was found to be influenced significantly by color and shading irrespective of card design, it is of interest to see the rank order of pleasantness ascribed to the various chromatic and achromatic series. This is shown in Table VI.

Here it is clear that multiple colors, such as appear on the original Ror-

TABLE V. Analysis of Variance Based on Affectivity Ratings

Source of Variation	d.f.	S.S.	M. Square	F
Total.....	299	460.92		
Interaction between persons and cards within a series.....	180	245.67	1.36	
Persons within a series.....	20	38.78	1.94	1.43
Forms.....	9	23.33	2.59	1.90*
Colors.....	9	42.67	4.74	3.86**
Form and Color.....	81	140.89	1.74	1.28

* F = 1.93 at the .05 level.

** Significant at beyond the .01 level.

TABLE VI. Rank Orders of Color Pleasantness

Color Set	Rank	Total Pleasantness Value (N = 30 cases)
		(Possible range: minus 60 to plus 60)
Original Rorschach.....	1	+20*
Blue.....	2	+9
Green.....	3	+6
Orange-Tan.....	4.5	0
Brick.....	4.5	0
Yellow.....	6	-2
Red.....	7	-5
Black (medium).....	8	-10
Black (dark).....	9	-15
Black (light).....	10	-21

* Although the experimental design did not provide sufficient randomization to permit adequate statistical analysis of any single set individually, it is interesting to note that the sums of the pleasantness values for the chromatic cards (II, III, VIII, IX, X) and the achromatic cards (I, IV, V, VI, VII) on the standard Rorschach set were +19 and +1, respectively. The average pleasantness score for cards II and III was +2, that for cards VIII, IX, X was +5. It therefore seems quite evident that it was the multichrome colors of the standard Rorschach set which determined the high pleasantness value ascribed to it.

schach chromatic cards, are most preferred. After that come the cooler colors, blue and green. The warmer colors, (orange-tan, brick, yellow, red) are responded to in a neutral fashion. But even the warm colored cards are preferred to the achromatic cards, which are rated as actually unpleasant. Might we say that most of us prefer life to be colorful, even if at times it may become uncomfortably warm, to leading a dark, drab, or colorless existence?

Since card design barely misses significance at the five per cent level, it may be of interest to see how the cards ranked in terms of preference or pleasantness. The data are given in Table VII.

Card IV was the least liked card, with Card VI coming next, even though these originally achromatic

cards appeared also in all of the monochromatic variations. Apparently the designs themselves are not liked, perhaps because of the fearful father image, and the sexuality, associated respectively with these two cards. Card X when stripped of the advantage of its multiple colorfulness by being compared with all other cards in all of the variations, fared not too well, with a pleasantness ranking of third from last. The disparateness or lack of cohesiveness of the card design is the likely reason for this low ranking. Card II, with the clowns or cuddly bears, was the most preferred card.

Perhaps because the effects of color and shading were completely neutralized in the analysis above, so that the pleasantness values are ascribable to card-form only, our rank order of card preferences is quite different from that obtained by Mildred B. Mitchell (4). Her subjects were asked to select the card liked best and the card liked least. The non-patients in her study (most comparable to our group of students) ranked the "liked best" cards as follows: X, IX, III, VIII, VI, I-II, IV-V-VII. They ranked the "liked least" cards, beginning with the most disliked, as follows: VII, IV, I-II-III, V, VI, X, VIII, IX. It is interesting that the three multicolored cards (X, IX, VIII) occupy the first, second, and

TABLE VII. Rank Orders of Card-Form Pleasantness

Card	Rank	Total Pleasantness Value
II.....	1	+11
V.....	2	+6
III.....	3	+3
I, IX.....	4.5	+1
VII, VIII.....	6.5	-1
X.....	8	-8
VI.....	9	-10
IV.....	10	-14

fourth rank, among the "best liked" cards, with Card III, another colored card, occupying the third rank. Cards IV, V, and VII, all achromatic cards, are tied for last rank. Contrariwise, among the "least liked" cards, Cards VII and IV, both achromatic cards, are the most disliked, while Cards IX, VIII and X, all multi-chromatic cards, are the least disliked. This is in general agreement with the finding of the present study when card-form is neutralized, that multi-chrome colors rank as the most preferred, monochrome colors rank next, and achromatic colors rank last. It is also in agreement with the findings of Wallen (6) who compared expressed liking for the original Rorschach cards and for photographed achromatic reproductions of these cards. He states that, for his normal group, "The significant decrease in the popularity of the last three cards when they are achromatic demonstrates the pleasantly stimulating effect of the multicolored blots."

Relationship between pleasantness and productivity. Since variation in color and shading were found to influence pleasantness rating significantly but not to affect productivity, it would seem unlikely that any relationship between pleasantness and productivity exists. This lack of relationship was substantiated by the data. Two rank-order correlations (Spearman rho's) were computed between productivity and pleasantness, each involving ten paired rankings. One involved the correlation between

rank order of productivity and of pleasantness, by color; the other involved the correlation between rank order of productivity and of pleasantness, by card design. (See Table VIII.)

The respective rho's of $+0.34$ and $+0.29$ (corrected for tied ranks) when tested by a t transformation as described by Kendall (3) are not significantly above chance, indicating a lack of any relationship between pleasantness ascribed to the card and productivity elicited by it.

Discussion

Perhaps it should be emphasized that the findings obtained in this study are pertinent only to the kind of population and conditions used in this experiment. In a "normal" group, absence of color shock might be anticipated, so that productivity on chromatic and achromatic cards might reasonably be expected to be similar (as was the case in the present experiment). An experiment specifically designed for this purpose by Allen (1) clearly establishes this as a fact. This might, however, not be the case in a psychiatric population. In addition, reaction time for first response to each card might be a more sensitive measure of color and shading disturbance than is the number of responses produced over a three-minute period, although another study by Allen (2) failed to reveal any significant difference in reaction time of normal college students to comparable chromatic

TABLE VIII. Rank Order of Productivity and Pleasantness By Color and By Card Design

Color	Rank Order		Card Design	Rank Order	
	Productivity	Pleasantness		Productivity	Pleasantness
Orange-Tan.....	1	4.5	X		
Green.....	2	3	III	1	8
Light Black.....	3	10	IX	2.5	3
Brick.....	5	4.5	I	2.5	4.5
Blue.....	5	2	II	4	4.5
Original.....	5	1	VIII	5	1
Medium Black.....	7	8	V	6	6.5
Dark Black.....	8	9	VI	7.5	2
Yellow.....	9	6	IV	7.5	9
Red.....	10	7	VII	9	10
				10	6.5

Rho = $+0.34$

Rho = $+0.29$

matic and achromatic cards. However, repetition of this experiment on psychiatric patients, utilizing reaction time in addition to number of responses would seem to be worth doing and might clarify the meaning of color and shading disturbance. A further refinement would be to administer, for example, a standard, a red, and a blue Rorschach set to a group of individuals and to compare the differences in performance on these by various nosological groups, e.g., hysterics, schizophrenics, etc. Perhaps the use of more than one set, or the insertion of particular colored or black and white cards during the inquiry or testing-the-limits phase, might sharpen the diagnostic focus. It would also make an interesting and possibly revealing research project to analyze various differentiating personality characteristics between the "form-bound" individual who would give practically identical performances on the achromatic and the various chromatic series, and the "color-responsive" individual whose performance on the achromatic and the chromatic, and indeed, on the different chromatic versions, would be quite decidedly different.

Summary

This study introduces a new research tool for investigating hypotheses involving relationships between personality structure and responsiveness to color and shading. This tool consists of ten different Rorschach sets or series (100 cards) comprising the following: an original Rorschach set; three achromatic sets differing in blackness-intensity; and six monochromatic sets running the rainbow gamut from blue through red. The study reported here was an investigation utilizing this tool to ascertain the effects of experimental variation in color and shading on Rorschach card preferences and productivity among a group of presumably normal, Rorschach-naive nurses. The experimental

design permitted ascertaining the effects of card design, design-color interaction, and individual differences in influencing card preferences and productivity; and it also provided an opportunity to determine whether there was any significant relationship between productivity and pleasantness ascribed to the card. The following findings emerged:

1. Productivity is independent of color and shading; is significantly influenced by card design; is even more significantly influenced by design-color interaction; is most emphatically affected by individual differences.

2. Card preference, on the other hand, is significantly influenced by color and shading; barely fails to be significantly influenced by card design; is not influenced significantly by design-color interaction; and is least affected by individual differences among the persons, or subjects, of the experiment.

3. There is no significant relationship between card preference and productivity.

Some limitations of the present study, and some additional research suggestions were mentioned. The ease with which the new Rorschach research tool lent itself to the present study suggests that it is a promising instrument for further research into the relationship between personality variables and responsiveness to color and shading.

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The Negation TAT; a Projective Method for Eliciting Repressed Thought Content^{1,2}

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INTRODUCTION

This investigation had as its aim the evaluation of a modified form of TAT administration, founded on the thought mechanism of negation as formulated by Freud, and as discussed by Rapaport.

The concept "negation" appears first in Freud's paper, "The Unconscious" (1, p. 119):

There is in this system no negation, no dubiety, no varying degree of certainty; all this is only imparted by the work of the censorship which exists between the Ucs and Pcs. Negation is, at a high level, a substitute for repression. In the Ucs there are only contents more or less strongly cathected.

The following statement, quoted from Freud's paper, "Negation" (2, p. 182), constitutes the fundamental proposition upon which this study is based:

Thus the subject-matter of a repressed image can make its way into consciousness on condition that it is negated. Negation is a way of taking account of what is repressed; indeed it is actually a removal of the repression, though not, of course, an acceptance of what is repressed.

From these considerations we learn in clinical practice to be attuned to *spontaneously* negated associations as

brief reflections of an individual's ego-alien psychic content. However, as regards turning this mechanism to use in standard projective testing, we are faced with the question of whether clinically *evoked* negation shares the properties of spontaneous negation.

An observation drawn from Freud's experiences as a psychotherapist is relevant to this question. He states (2, p. 181): "There is a most convenient method by which one can sometimes obtain a necessary light upon a piece of unconscious and repressed material. 'What,' one asks, 'would you consider was about the most unlikely thing in the world in this situation?'" Rapaport is more explicit (3, p. 339): "The aim of this question is to create the same psychological situation as the one which prevails when a negation spontaneously arises. It attempts to arouse forces that would negate the drive-representation as soon as it rises to consciousness, and thereby to obviate the danger of its being acted on, which is the reason for repressing it . . . [It] clearly illustrates that negation is a significant aspect of the thought process. It shows how communication can play a dynamic role in thought organization: the question permits a loosening of repression by preparing the ground for negation."

The present research attempts to evaluate systematically the clinical validity of evoked negated associations. It thus seeks to bring empirical evidence to bear upon the above formulations.

As a projective method, the negation approach had its initial trial somewhat accidentally in a particularly difficult testing situation. A few days after having read Freud's paper on negation the author was engaged in administering the TAT to a psy-

¹ Reviewed in the Veterans Administration, and published with the approval of the Chief Medical Director. The statements and conclusions published are the result of the author's own study, and do not necessarily reflect the opinion or policy of the Veterans Administration.

² This study was conducted at the Boston VA Mental Hygiene Unit. The author is indebted to Dr. J. Warren Thiesen, Chief Clinical Psychologist, and other members of the clinic staff for their helpful advice and suggestions, and in particular to Dr. Charles Storey, Dr. Lazarus Secunda, Dr. Stewart Smith, and Dr. William Shelton, who participated as therapist-raters.

chotic patient. The patient's typical response to every picture ran something like: "That man has heavy thinking. He's in deep thought. There are lots of worries and there's pressure over here. Everything is darkness." To such responses the examiner would inquire: "What kind of thinking? What might the thoughts be? What is he worrying about? What is in the darkness?" etc. The patient's response to this type of inquiry ran monotonously as follows: "Oh, don't ask me that! I can't answer that: You mustn't ask me that kind!" On the last card (18BM), after the patient had responded in his usual manner, the examiner asked, somewhat in exasperation: "What is the one thing that could *not* be happening in this picture?" The patient's immediate response was: "He wouldn't fight back. He couldn't do that. He has eaten too much and he is too fat from living a bad life. He couldn't fight back." This was the only response in the entire TAT protocol in which there appeared any identifiable content.

The clinical utility of this device, as employed by the writer, has since proved impressive. TAT stories in response to the standard instructions present the usual representative picture of the individual's characteristic defenses, with inferential cues (almost always highly disguised by the censoring processes) concerning the unique forms taken by his unconscious imagery. The negated counterparts of these stories have tended, with encouraging regularity to reveal in naively undisguised forms the fantasies, images, and wishes, which would appear to be the objects of repression. It is as if the individual, thus encouraged to shift responsibility for his own associations onto the examiner and his instructions, seizes this as a brief opportunity to give relatively uncensored expression to his repressed desires.

The negation instructions have been found to be most productive with normal subjects, and with pa-

tients who yield extremely guarded material in response to the standard instructions despite the establishment of a good patient-examiner working relationship. On purely impressionistic grounds the writer has come to view responses to the negation instructions in three categories: (1) The individual accepts the instructions immediately and naively, seeming almost grateful to the examiner for coming up with this helpful new twist and proceeds to weave a fantasy of strikingly uncensored quality. (2) The individual "sees through" the instructions, usually remarking that this is ridiculous because *anything* could *not* be there. Then, under the examiner's pressure he tries to concoct something utterly fantastic, as if to prove his point. This type of response shares the disguise features of the standard TAT story. However, the symbolism employed seems much more thinly veiled and amenable to much more confident inferences on the part of the interpreter. For example, one patient who suffered from extreme feelings of sexual inadequacy, after remarking that anything he said would be meaningless "because anything could *not* be there," responded to Card 13 as follows: "Well, all right, then you could say that he's *not* riding a motorcycle, because he could never handle a motorcycle. And besides, motorcycles make his wife sick. That's *not* in the picture!" (3) The third category refers to a small minority of individuals who seem not to comprehend the instructions. For example: "I couldn't do it." "That's too hard for me." "It doesn't make any sense."

The writer's experience with the negation device has not been sufficiently extensive to note any consistent parallels between these categories and accepted nosological groupings. Theoretically, one would expect personalities of "hysteric" structural emphasis to populate the first category and personalities of "obsessive-compulsive" structural emphasis to populate the

second category. A different line of research from that pursued here will be needed to explore this question.

As it was employed in this study the modified administration of the TAT involved very simply asking the subject to make up the most unlikely story that came to mind for each picture—*after the entire standard set of stories had been collected*. To reverse this order, experience had shown, was to undermine the projective “set” intended by the standard instructions. After giving negated responses the subjects’ reactions to the standard instructions seemed dominated by a conviction that there was a *correct story* (an observation, in itself, worth noting, in respect to the reality testing function attributed to negation in psychoanalytic theories of thinking.) The exact phrasing of the negation instructions varied with the intelligence and types of resistance shown by the subjects. For example: “What is the most unlikely theme this picture might represent?” “What is the last thing in the world that this picture might bring to mind?” “What could *not* be going on here?”

PROCEDURE

1. A five card TAT (8BM, 13MF, 14, 17BM, 18BM) was administered under two sets of conditions to eleven patients in psychoanalytically oriented psychotherapy at the Boston VA Mental Hygiene Clinic. All patients had been in continuous treatment with the same therapist for at least six months prior to testing. The two sets of conditions were:

- (1) Standard (Murray) instructions.
- (2) Negation instructions.

2. The protocols were recorded verbatim on tape.

3. The negation protocols were edited to eliminate references to the negation instructions, thus eliminating an obvious source of possible bias in the rating of the stories.

4. Typed transcripts of the paired protocols were codified and their re-

spective positions on the rating sheets randomized.

5. “Blind” comparative ratings of each pair of stories were made by each patient’s own therapist, answering the question: “Which story of each pair more lucidly suggests this patient’s repressed psychic content, as you know it?”³

In order that you may more clearly appreciate your role in the research let us fill you in on some of its background. We think we have discovered a new way of administering the TAT which tends to elicit repressed material in much less disguised forms than does the standard method of administration, and we are out to prove it. We do not think the new procedure is better, generally, than the old—only that it yields something different which is clinically valuable: namely, the direct expression of the kind of repressed content which is only vaguely if at all alluded to in other testing procedures. Thus, the specificity of our question.

The concept “repressed psychic content,” then, is the key concept in our research, and this is where you come in. The concept of “repression,” because of the looseness of its referential boundaries raises serious obstacles for any scientific research in which it is involved. Imagine, for example, the difficulty that all of the psychoanalytically oriented therapists involved in this study would have in trying to agree precisely on an explicit definition of “repressed psychic content.” However, we assume that a common denominator of reference exists, which, though perhaps undefinable at present, allows each of you to communicate in meaningful ways with one another about your patients. Now, since we do not consider it to be the purpose of this research to define the concept of repression, but only to critically evaluate two testing procedures, we are skirting the whole problem of definition by leaving it up to you who are in the best position to know what’s what, definition or no. Thus, we are claiming for our purpose that “repressed psychic content,” in any particular patient, is what his therapist says it is. In other words, we are asking you to fill the role of expert whose judgments we shall use as criteria in evaluating our hypothesis. That is why we are not telling you in advance what the new procedure consists of or which story is which. We are predicting on the strength of our hypothesis

³ *Therapist-rater Instructions:* In rating the imaginative productions of each of your patients you are asked to answer *one specific question: Which story of each pair of stories more lucidly suggests repressed psychic content in this patient?*

how you will judge them on their own merits, and according to how accurate our predictions are, to that extent we shall consider the hypothesis valid.

Remember, we are interested *only* in your answer to a very specific question: *not* which set of stories "tells more about" the patient; *not* which gives more information about "control mechanisms," or "ego strength," or "phase of therapy," etc.; *only* which set of stories lucidly suggests repressed psychic content.

Four psychoanalytically trained psychiatrists cooperated in the study as therapist-raters. They were provided with the pertinent TAT pictures and copies of their patients' recorded productions. Precautions were taken to prevent the therapist's knowing what the "new" TAT instructions were. This was doubly insured by the editing of the negated stories. The ratings were, therefore, presumably made only on the bases of the content of the stories in relation to the pictures themselves and each therapist's own intimate knowledge of his patient.

RESULTS

In 46 of the 55 pairs of TAT stories the negation story was rated more lucidly suggestive of repressed psychic content. This differential is statistically significant at greater than the .001 level of confidence, using the sign test (5).

The following examples serve to convey some of the clinical flavor of these findings:

Patient A: TAT card 8 BM

Standard story:

An operation. A father is laying down on a cot, his son is, his son can't face the realities of life, is afraid that his dad may die. Surgeons are going about their business in a methodical way. The patient, I believe he is under anesthesia; he's not having any anguish in his face at all; just poor light. Could be, could be war; could be possibly during the blitz, I should say, and they don't have any emergency hospital. They are doing surgery right there, right in the room. The room is somewhat demolished. The window is on an angle. The boy is well dressed though; that's the strange part about it. The doctors are

dressed . . . they have their white uniforms on. There's a rifle there. Could be fifth columnists, underground. This boy is young. Why would he be dressed, that's the question? Since everything else looks demolished. There's a rifle; shining in the sunlight. (Outcome?) Well, we all hope for the best. Like myself, going back to myself, I hope these treatments I've been receiving from Dr. Smith. Oh Christ, God, I don't know! As far as this picture here, I hope it ends up for the best.

Negation story (rated more suggestive of repressed material):

He's going to have a baby. Maybe we go back to Christmas at Devil Island when the convicts would hide these tubes, or vials, or whatever you want to call them, up their rectum. They kept their valuables in them. But then again he's not on his back, on his stomach. The doctors could be, say, mercenary, and they are trying to take out his money. He had a money belt sewed on his stomach.

Patient B: TAT card 8 BM

Standard story:

Well, it looks as though there had been some sort of an accident here, down in the foreground. I don't know. I can't seem to compose enough of a story from it. (An accident, you say?) Yeah, it looks as though it's symbolic of an accident or an illness. Is this a weapon, do you know? (Whatever comes to mind.) It looks like a weapon and it looks as though they are operating on an emergency. The condition being a gunshot wound, and perhaps the climax. . . Either that is a female or a male person being operated on. Apparently there is a loss of life as a result of the accident, and the picture of the boy on the foreground shows perhaps the loss of a parent, if there was a parent, or kinfolk. That's all I can see. (Outcome?) I don't know. It's just one of, it looks like the thing, no, ended in sorrow for the child.

Negation story (rated more suggestive of repressed material):

This would remind me of this young boy, for example leaving the table and this man here would be his father and he is sawing or cutting through a large steak which he is about to eat. The other person would be at the table, the young man would be eating, so that it would be symbolic of that, I should think. Help him to eat.

Patient C: TAT card 18 BM

Standard story:

This guy is stiff. Somebody is taking him some place. His hands look too delicate. They're cops. Maybe it's not even a person. Maybe it's something spiritual. He's all dressed up so he's not a bum. He's got drunk for some reason, maybe to forget whatever problem he may have. Now he's . . . tomorrow morning he will wake up and he will be o.k.

Negation story (rated more suggestive of repressed material):

This guy is laying there and contracts (sic) for so long, and this woman here is chasing him, is holding him up, making him keep on going through the steps, follow the routine. He is disgusted with her. He wants to go to sleep.

Normal Subject: TAT Card 14

Standard story:

This is a boy. He was asleep in his bed at night and he heard the noise of jets overhead. And he jumped out of his bed and ran to the window to see the blue exhaust of flames of the planes shooting through the sky. And it thrilled him. And he decided that when he was of sufficient age he was going to join the air force and perhaps fly a jet. And he struggled through school. He graduates high school and joins the army. He's physically accepted to fly; learns to fly and distinguishes himself in air battle. He comes home a hero.

Negation story:

Well, this is a boy. It's a very dark room. It's a laboratory. He's working in a laboratory. It's a dark room. And he's a photographer. He's studying photography. And he just finished making a composite picture of his father in bed with another woman. And he just finishes processing it. And it's come out very successful. And he's standing at the window thinking how he's going to show it to his mother and wreck his mother's marriage.

DISCUSSION

The results would clearly seem to justify further explorations into the clinical and research utility of the negation approach, and it is hoped that this report will be a stimulant to such research. Particularly enlightening would be a study designed to evaluate the efficacy of this approach in eliciting *clinically relevant* and *distinguishing* material, i.e., material

that permits of distinguishing between individuals on the basis of *specifically important* repressed psychic content. It is suggested that more exhaustive validation research in this direction will lead to a more thorough-going assessment of the practical clinical value of the Negation TAT.

Insofar as the results are supported by further validation research they support the position taken by Wyatt (4) that the standard TAT story is a product of a confluence of waking ego functions brought to bear upon unconscious strivings; that the latter are rarely revealed in uncensored forms in the TAT production; and that more caution should therefore be exercised in imputing "unconsciousness" to the actual expressions of the standard TAT story. Wyatt states: "In the light of the experiences of psychoanalytic therapy, the process which produces responses to the TAT seems to be much more one of defense and elaborate safeguarding against dangerous promptings than their frank fulfillment."

The need for interpretive caution must, of course, hold for the negation TAT story as well, since negation is, itself, an ego mechanism. The results of this study, however, while supporting Wyatt, with respect to the standard TAT story, suggest that the negation TAT story is much less subject to the elaborate censoring activities that characterize the standard TAT story, highlighting instead the very content that we assume is being censored in the standard story. Thus, the negation approach is not to be considered a substitute for the standard approach in diagnostic work, but rather a complementary approach that can aid in the interpretive process, at that step in the process where aid is now most needed, i.e., in the identification of specific unconscious content.

Indications for Further Research.

This study has emphasized the *clinical* utility of the negation approach

in conjunction with the projective approach. In view, however, of the theoretical properties attributed to the negation mechanism by the psychoanalytic theory of thinking, and in view of the experimental properties shown by this study to adhere to the negation approach, the approach itself may make its principal contribution as an *experimental* tool in general psychoanalytical research.

From the point of view of the psychoanalytic theory of thinking, negation is a variety of conscious experience. As such, it is closely inter-related with the function of judgment. More specifically, in the meta-psychological language of the theory, it is one of the controlling organizational ego functions involved in reality testing. Still more specifically, negation is conceived as a thought mechanism (related to but not to be confused with "defense mechanism", e.g., denial) through whose agency ego-dystonic material can circumvent the various censorships, under the guise of disbelieved conscious experience, in support of ego *syntonic* aims.

It would seem, then, that the negation mechanism operates as one of the agents of that experimentally elusive fluidity that is conceived to exist between the primary and secondary systems of thought organization. In Rapaport's terms (3, p. 343): "Negation appears to be a re-representation of repression on a higher level of integration."

It is noteworthy that in considering the theoretical position of the negation mechanism the focus of our interest has shifted pointedly from the identification of unconscious content, pathologically organized, to the understanding of normal, creative organizational processes. It is in this latter area, where research efforts suffer from a paucity of natural and controllable experimental tools, that the negation approach may make its most strategic contribution.

To date, in general psychology, research efforts in understanding the

nature of "thought" have dealt almost exclusively with secondary process thinking, as may be witnessed, for example, in the long list of "concept formation" studies. There have been relatively few systematic efforts to study the primary process, and still fewer have attempted to investigate the assumed processes of fluid interaction between the two. This is understandable in view of the relative inaccessibility of primary process material to observation during normal waking life. Indeed, since observations of the psychoanalytic method itself are not subject to traditional experimental controls, we have had to rely almost entirely upon the reported dream, the hypnotic state, and various states of narcotism as the tools of systematic research in this area.

Certainly, the negation approach will be found to have its limitations. Before these are discovered, however, it may well prove in its research contribution to be, like the free association method itself, a simple and productive investigative wedge into the resistant processes of dynamic mental functioning, and this while permitting of experimentally controlled observation during directed normal waking activities.

SUMMARY

This study sought to make a preliminary evaluation of a modified form of TAT administration founded on the thought mechanism of negation. After the standard TAT stories have been collected the subject is asked to report for each picture the most *unlikely* story that comes to mind. The clinical utility of this device, as employed by the writer, has proved impressive in eliciting naively undisguised *psychic content*. The present study was designed to test these impressions.

Eleven patients in psychoanalytically oriented psychotherapy were administered a 5 card TAT, first with the standard instructions and then with the negation instructions.

"Blind" comparative ratings of each pair of stories were made by each patient's own therapist answering the question: "Which story of each pair more lucidly suggests this patient's repressed psychic content as you know it?" In 46 of 55 pairs of stories the negation story was rated more lucidly suggestive of repressed psychic content. This differential is statistically significant at greater than the .001 level of confidence. Concrete examples were presented.

The study lends support to the position that the standard TAT story does not reveal uncensored "unconscious" content so much as it reveals the machinations of the censorship surrounding this content.

The results would appear to justify further explorations into the clinical and research utility of the negation

approach. In view of the theoretical properties attributed to the negation mechanism it may prove to be peculiarly adapted to the study of the transitional dynamics between the primary and the secondary systems of thought organization.

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Increments and Consistency of Performance in Four Repeated Rorschach Administrations

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In work with the Rorschach, interpretations are almost always based on a single test administration. The assumption is made that only in his initial and spontaneous reactions does the subject select responses which optimally reveal his personality and that these responses, with a few additions, constitute the entire universe of psychologically meaningful or interesting responses. The basis for this assumption undoubtedly lies in the theory that perception of the Rorschach blots is selective and that what is initially selected is of special significance. In the present paper, we will take the position that this selective process continues well beyond the perceptions which are ordinarily reported on a first administration of the Rorschach and that the development of a technique for eliciting large numbers of additional perceptions is of psychological interest.

A number of considerations lead us to question whether it is wise to put all our eggs in the basket of a single administration of the Rorschach test. Experience in psychotherapy and in personality study indicates that very often patients are unwilling or unable to express their major concerns and preoccupations on an initial contact and only very gradually, after many sessions, do they become freely expressive. We suggest that many of the instances in which the Rorschach "does not test" as Lowell Kelly has put it, or does so in a disappointingly sparse way, are cases of this kind of initial reticence or inhibition rather than "emotional impoverishment," "shallowness," or "inconsistent differentiation."

In this connection, a host of studies, such as those by Lord (7),

Kimble (5), Klatskin (6), Eichler (1), Gibby (2) and Hutt and his colleagues (3) indicate that the circumstances surrounding the administration of the test have a considerable influence on the nature of the responses. This influence is not superficial but affects the most basic aspects of the performance. If test results derive in part from the specific situation in which the subject finds himself at a particular moment, we may draw the conclusion that any one test performance can hardly tell the whole story since in other situations the subject might appear to be quite different.

The most convincing argument against the complete reliance of the Rorschach worker on a single performance lies in the astonishing complexity of personality. As clinicians, sensitive to this fact, we expect that even when an interview or test procedure yields apparently profound insights into personality, subsequent information will broaden the picture and modify our impressions. This process seems to go on as long as we continue to study the subject and we literally never achieve a final or true formulation. Work at the Harvard Psychological Clinic with the TAT has shown that only part of the potential of the subject is tapped by the 20 pictures in the test and that with repeated administrations of the TAT or with additional testing of the story telling variety, important additional material can be obtained which not only expands our picture of the subject, but often sharply alters any formulation based on the first administration.

Recent studies of Rorschach performance usually reveal a great deal of

similarity in responses from one administration to another. Even when there have been drastic intervening conditions, the stability of perceptions is remarkable. We believe that this stability is a function of the dominance of what has already been seen and that perceptual organizations once achieved tend, under certain conditions, to interfere with the emergence of new ones. The conditions we have in mind exist when the old perceptions are in competition with potential new ones. This is the case in the usual retest situation. If we ask why the old perceptual organizations do not interfere with new ones during the course of a single test we can say that a response which has already been given does not compete with new ones which are emerging since only the new responses satisfy the demands of the test situation. The older responses are no longer of value in terms of the immediate needs of the subject and thus lose their compelling and dominating force.

Since we were, in the present study, interested in seeing whether substantial numbers of additional responses could be produced, this analysis offered a clue to the appropriate method for eliciting them. This was simply, on the second and subsequent administrations, to ask the subject to report only new perceptions and to omit anything he had given earlier. This instruction we hoped would remove the dominating and inhibiting influence of what had already been seen.

Using the instruction to report only new and different responses, the Rorschach was administered four times. We had the following questions in mind: (1) Can subjects produce a substantial number of responses in addition to the ones given on a first performance? (2) Do these new responses, if forthcoming, add significantly to the personality picture derived from a first performance? (3) Are the new responses, if forthcoming, substantially similar to the ones given on a first performance in terms both of content

and scoring categories? We believed that the answers to these questions would have certain implications for Rorschach practice and theory, for the question of the reliability of the test and would yield new insights into the correlates of Rorschach productivity, a subject dear to the heart of anyone who has given three 15 response Rorschachs in succession.

PROCEDURES

The subjects in this study were 28 college students who were volunteers from an introductory psychology course at the University of Kansas. The group Rorschach was administered four times, using the Harrower-Erickson slides which were projected on a screen and exposed for a minute and a half in the regular position and a minute and a half in an inverted position. On the second, third and fourth administrations, the subjects were told to give only new and different responses. The protocols were subsequently examined and a very small number of responses which we judged to be duplicates were eliminated. The time interval between the tests was 4 days. A special effort was made to create and maintain a friendly and relaxed atmosphere and high group morale throughout the experiment. A fifth session was held in which an inquiry was conducted, and a sixth session was held in which the subjects filled out a questionnaire asking for certain attitudes and feelings with respect to the test experience. The experiment was also explained and discussed during this session. It is of interest that all 28 of the subjects who started continued in the experiment until the last session which was optional.

RESULTS

Table I presents the mean scores for 17 Rorschach variables on each of four administrations. It may be seen that productivity as measured by the number of responses dropped about a third on the second administration, but maintained itself

TABLE I. Mean Score of 28 Subjects
In 4 Repeated Rorschach
Administrations

	Test I	Test II	Test III	Test IV
R.....	34.8	23.9	21.0	23.7
M.....	7.2	5.4	4.5	4.1
FM+m.....	9.1	5.9	5.1	5.1
k+K.....	.8	.3	.3	.4
FK.....	.3	.3	.2	.2
F.....	11.9	8.9	7.9	8.6
Fc+c.....	3.4	1.7	1.5	1.8
C'.....	1.6	1.5	.9	1.4
FC.....	5	3	2.9	2.5
CF+C.....	1.2	.9	.5	1.4
sum C.....	3.9	2.5	2.3	4.6
M:sum C.....	1.8	2.2	1.9	.9
W.....	17.8	9.4	7.4	12
D.....	14.7	12.9	9.6	8.7
d.....	.2	.4	.4	.4
Dd+s.....	2.5	2.6	3.3	2.6

TABLE II. Kendall's Coefficient of
Concordance, W, Showing Stability
of Ranks on 13 Rorschach Variables
of 28 Subjects in 4 Administrations
of the Rorschach Test

Variable	"W"	P
F.....	.49	.01
M.....	.46	.01
FM+m.....	.48	.01
Fc+c.....	.50	.01
FC.....	.42	.01
sum C.....	.40	.01
M:sum C.....	.37	.02
W.....	.65	.01
D.....	.50	.01
Dd and S.....	.52	.01
Sum c*.....	.48	.01
M:sum C*.....	.42	.01
R*.....	.64	.01

* On the starred measures, "W" is based upon actual frequencies of responses. For those which are not starred, the scores were converted to percentages.

at the same level on the third and fourth. To our question as to whether subjects can produce substantial numbers of new responses, we can answer in the affirmative since subjects who gave an average of 34 responses originally, produced an average of 68.6 new responses on the three later performances. These results also strongly suggest that this is not the outer limit of productivity but that a fifth and sixth administration would bring even more responses. Informal experiments with as many as nine administrations have revealed there is a gradual decrease both in number and quality.

Table II presents Kendall's coefficient of concordance, a non-parametric test of consistency of rank, for 13 Rorschach variables. It may be seen that twelve are significant at the .01 level and one at the .02 level. These findings indicate that there is a significant degree of stability in the scores on the location and determinant categories over the four performances. We should mention that these scores were in the form of percentages rather than numbers of responses, so that we were working with M%, FC%, etc. This means that the fact that individuals tended to hold their ranks in all four performances was not a function of differences in the

number of responses. These findings do not, however, resolve adequately the question of whether the responses in each of the four performances are distributed in the same way among the determinant and location categories. The significant Ws indicates that a similarity does indeed exist but a question remains as to the magnitude of the similarity and it is difficult to translate the size of the Ws into such terms.

The product-moment correlation provides an index of similarity of relationship between sets of scores. Table III presents the correlations between tests 1 and 2, 1 and 3, and 1 and 4 of scores on 13 variables. Correlations are given both for scores converted to percentages as in M% and for scores reflecting simple frequencies as in number of M responses. Of the 43 correlations computed, 17 are significant at the .01 level and 3 others are significant at the .05 level. R, FM, and M, and the location categories tend to show the greatest amount of consistency. The Rs, taken as a group, indicate that there is a considerable amount of relationship between performance 1 and subsequent performances. However, the coefficients of alienation indicate that only a rela-

TABLE III. Product Moment Correlations of Rorschach Scores of 28 Subjects In 4 Repeated Administrations.

Test	1 and 2		1 and 3		1 and 4	
	Freq.	%	Freq.	%	Freq.	%
R.....	.72**		.56**		.64**	
M.....	.07	.51**	.41*	.17	.33	.06
FM+m.....	.49**	.41*	.60**	.57**	.54**	.53**
F.....		.54**		.36		.17
FC.....	.30	.28	.38	.41*	.13	.37
Sum C.....	.16	.32	.20	.21	-.04	.20
M:Sum C.....	.16		.53**		.22	
W.....		.75**		.70**		.49**
D.....		.67**		.46		.62**
Dd and S.....		.54**		.47		.08

* Significant at the .05 level.

** Significant at the .01 level.

tively small part of the variance is accounted for by these correlations. The highest correlation, .75 for W% between tests 1 and 2 accounts for 52% of the variance while an R of .51 accounts for only 27% of the variance. The findings indicate therefore that there has also been a considerable amount of change. These changes were large enough so that the basic shape of the psychogram showed relatively little stability. Using only percentages of movement, form and Sum C responses it was found that when the patterns formed by these scores were compared for tests 1 and 2, 1 and 3, and 1 and 4 for the 28 subjects separately, on only 18% of the pairs was the pattern the same so that for example, F% was still highest, M% second and Sum C% lowest.

Perhaps the most interesting data in this study have to do with the changing content of responses in the four administrations. Unfortunately space does not permit our going into this in more than a cursory way. In order that the reader get some idea of the concrete situation, however, we have presented the responses of one subject. No claim is made that she is absolutely typical or representative since reactions varied a good deal in different subjects. However we can say that this kind of sequence of responses is in no way unusual. The subject is female and aged 19. The responses are to Card I. Inquiry is omitted.

Test 1.

- 1 — Bat
- 2 — Air Shield
- 3 — Cliffs
- v 4 — A water fountain as in a park
- 5 — A Chinese tower, place for cars to drive under

Test 2.

- 1 — Hands reaching out
- 2 — Top — an explosion with fragments flying
- v 3 — Small animals in center casting spell downward

Test 3.

- 1 — Two large birds resembling people fighting
- 2 — Two tiny figures like elves right in center, each has an arm up over his head
- 3 — Egyptian or Chinese lady with full sleeves and tall hat in center

Test 4.

- 1 — Two winged chiefs over a conference table
- v 2 — Masses of molten lava

In this example new responses appear on tests two, three and four which not only lend themselves to new content interpretations but were not suggested by anything which came before. This is absolutely characteristic and occurred in every one of the 28 subjects.

DISCUSSION

What are the implications of these findings? The fact that these subjects have been able to produce large numbers of additional responses is, we

believe, of considerable significance. It suggests to us that the very great individual differences in Rorschach productivity which constitute one of the most notable of Rorschach phenomena, do not stem from basic differences in capacity but are dependent instead on motivation and set and are to a considerable extent subject to manipulation. This is a very large jump from our results especially since our subjects were college students, a group noted for its high productivity. It would therefore be very nice to have this experiment repeated with other classes of subjects including that recalcitrant group of psychoneurotic patients who ordinarily average around twelve responses. Such experiments are planned for the near future. However, we do not feel that the correctness of our conclusion is really dependent on the results of these additional studies. Neurotic subjects in a hospital setting will undoubtedly be less responsive to our wishes than were the college students, but we would be very reluctant to believe that really basic differences exist. To get more responses from the former one would simply have to develop an appropriate test setting in which compliance with the tester's instructions satisfies the subject's needs in some genuine way. We do not mean to assert that intelligence is not related to the capacity to produce large numbers of responses but we think that subjects within the normal range have a much larger Rorschach potential than is ordinarily sampled by a first performance. Individual differences in capacity may exist at a much higher level so that some people may be able to produce as many as three or four hundred responses before quality declines and they are unable to go on while others may be able to give only 75 to 100 responses. Our point is not that differences in capacity do not exist but that the number of responses given on a first performance is a poor measure of capacity.

Since a first Rorschach administra-

tion ordinarily samples a good deal less than the total Rorschach potential we may ask whether it adequately represents the larger universe of responses. Our findings are not clear on this point. On the one hand they indicate a definite similarity between the first and the second, third and fourth performances. On the other hand there is a considerable amount of change and the basic shape of the psychograms tend to be quite variable. The size of the correlations when judged by the standards against which we ordinarily measure reliability are quite low. However, there is a question as to whether these standards are appropriate in this situation.

While we entertained the possibility that the correlations might be very high and would have regarded this as convincing evidence of one aspect of the reliability of the test, namely performer consistency, our own expectations were that they would not be high since we took the position that only some aspects of the subject's personality would be expressed on a first test and that others would be expressed on subsequent performances. Our findings indicate that this expectation was correct. Nevertheless the amount of stability is considerable and may be regarded as evidence that the Rorschach test does tap some functions of personality which express themselves in a consistent way.

The demonstration that subjects can produce substantial numbers of additional responses inevitably raises the question of why they ordinarily stop so far short of their capacity. One possibility which we seriously entertained was that subjects become psychically fatigued or satiated and are actually unable to continue. Certainly some subjects act very much like brain injured patients in their inability to shift and reorganize the blot stimulus despite apparently strong efforts to do so. However, these appearances may be deceptive and further research is needed to determine whether actual

incapacity or motivation and set are the crucial factors.

In conclusion, these results suggest that a certain degree of caution is appropriate in interpreting a single Rorschach performance. Such interpretations should be made in the light of the findings, presented in this study, that the responses obtained are only part of the story, and that they are tied to the peculiar circumstances under which the test was given. We interpret our data as demonstrating in conclusive fashion what many other Rorschach studies have implied; namely, that the single Rorschach performance cannot be regarded as an adequate, stable or complete representation of the personality characteristics which the Rorschach is able to describe.

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The Inter-examiner Reliability of the Rorschach Test

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INTRODUCTION

Reliability has several aspects:

1. Self-consistency of the subject. Is the pattern of Rorschach responses given by an individual stable or does it vary and what are the conditions under which it varies?

2. Self-consistency of the examiner. To what extent will a given Rorschacher agree with his own scoring, his own interpretation?

3. Consistency among examiners in scoring and interpretation. Given the same protocol, will independent Rorschach workers score and interpret it in the same way?

We are here concerned with the last, the inter-examiner reliability of scoring and interpretation. The scoring of the Rorschach test yields readily enough to statistical study but Rorschach interpretations are usually clinical reports, i.e. they are *verbal accounts* about character structure, interplay of traits, behavior, prognosis, etc. As such, they vary depending on the individual interpreter's theoretical frame of reference in psychology, his talent and insight and verbal ability and the immediate use to which a clinical report needs to be put. The individual interpreter's definition and use of many terms like anxiety, adjustment, identification vary. These verbal accounts, while frequently meaningful and useful in a clinic situation, are almost impossible to equate from one examiner to the next with any degree of certitude and exactness. To minimize this problem, a questionnaire was used.

Studies of the inter-Rorschacher reliability of interpretation have been reported for a single case (5), with problem children (6) and with adolescents (3). The reliability of Rorschach "signs" has been examined in several studies (2, 8). There are reports of scoring reliability (1, 4, 9, 10), surprisingly few considering the relative ease with which inter-examiner agreement on scoring can be checked. In general, agreement on scoring and on the presence or absence of certain Rorschach "signs" is good. Reports on the reliability of interpretation are few and ambiguous. Most of the reliability studies of scoring, "signs" or interpretation, have involved Rorschach workers who are working together, usually in a clinic situation.

PROCEDURE

This is, in a sense, two duplicate experiments with the data of each experiment combined. Forty Rorschach protocols were randomly divided into two groups, twenty in each. Six Rorschachers were randomly assigned: A, B and C received the same 20 protocols (set ABC) and D, E and F received the other 20 protocols (set DEF).

The Rorschachers

The six Rorschach workers averaged 10.5 years of general experience in clinical psychology and 8 years of work with the Rorschach test. All have published research articles involving Rorschach data and all have taught the Rorschach technique.

The Rorschach protocols

The 40 protocols were all administered by the writer at a voluntary outpatient clinic for alcoholics, the Yale Plan Clinic. The subjects included 29 men and 11 women and mean age was 41.8 years with a range from 25 to 57.

¹ Based on a dissertation submitted to the Department of Psychology of Yale University in partial fulfillment of the Ph.D. requirements. The writer would like to express appreciation toward Professor Irvin L. Child who has been helpful and encouraging.

years. Mean educational level was the 12.3 grade. Thirteen subjects were white collar workers, 12 worked in professions or as executives, 11 worked at mechanical trades and there were 3 housewives and 1 college student in the group. Twenty-nine patients were married, three single and eight either divorced or separated from husband or wife. The 40 patients have in common a symptom, i.e. chronic alcoholism, and their presence at a clinic for diagnostic or psychotherapeutic help. All were tested early in their clinic contact. The patients represent a wide range of psychopathology (as alcoholics do). The Rorschach protocols were randomly chosen from the test file, the only selective factor being the size of the protocol. Only protocols with at least 15 but not more than 60 responses were used. The average number of Rorschach responses of the 40 protocols was 26.5.

The Questionnaire

A preliminary survey was made in which six Rorschachers were asked to list the main parts of a Rorschach interpretation and to check behavior items they felt confident predicting from the Rorschach. From this survey, a ten item questionnaire was devised. Wording the questions presented a problem: most Rorschach workers agree that Rorschach test data cannot predict behavior in highly specific situations; at the same time, questions need to be concrete in order to minimize ambiguity. The number of alternative answers depended on the question. On the first nine items of the questionnaire, the interpreter selected one out of three to five choices but it was not possible to so limit the question about the patient's outstanding symptom or diagnostic feature. The questions posed were:

1. What is this person's intellectual capacity?
2. To what extent is this individual using his capacities?
3. Is this person ambitious, i.e. to what extent is the drive to achieve or accomplish present, to what extent does

he actively strive to reach goals of intellectual, social or occupational success?

4. To what extent is this individual rigid or flexible in adjusting himself to the changing demands of most life situations? In other words, is he in a rut or to what extent can he change his behavior to fit a changed situation, e.g. how does he react to his job when a new supervisor is introduced or new work requirements set up?
5. How would you characterize this person's work habits, i.e. how do you think he handles problems related to his job, to intellectual tasks?
6. In a social situation and everyday contacts with people, how would you expect this person to act, e.g. at a party or alumni gathering, bowling, meeting business contacts, etc.?
7. How much emotional control does this person exhibit in stress situations, e.g. first clinic contact, loss of a job, being left by his wife, etc.?
8. To what extent is this individual sensitive to and responsive to the needs of others, e.g. in love relationships, family relationships, friendships?
9. How would you evaluate this person's sexual adjustment, i.e. the degree to which he anticipates and receives pleasure from sexual intercourse?
10. Outstanding symptom or diagnostic feature?

Rorschach factors relevant to each questionnaire item

Before the protocols were sent, each Rorschacher was sent a copy of the questionnaire with the following instructions:

Please list under each question those Rorschach factors which you feel must be considered in answering each question. We are aware that in making an interpretation on some specific point, several Rorschach elements are evaluated together and in the context of the whole record. What we would like to know is what these elements are, i.e. which Rorschach factors are to be considered in answering these questions of interpretation?

The life history abstract

"Blind" interpretations are considered to be parlor tricks by most competent Rorschach interpreters. On the other hand, a history including de-

scription of the patient's symptoms and a psychiatric evaluation undoubtedly influences interpretation so that we are no longer dealing with the reliability of the Rorschach test alone as a clinical instrument. The aim of the study was to simulate clinic conditions but to minimize cues other than the Rorschach test. Each Rorschach protocol was therefore accompanied by an abstract of the patient's life history containing some facts of his life but no information about the patient's personality traits, emotional reactions or the opinions of others about him. The life history abstract included the patient's age and sex and the most important facts of his family, educational, occupational, marital, religious, military and medical history.

The control judges

In order to evaluate the agreement of the Rorschach interpreters, the life history abstracts of the 20 ABC patients were submitted to three clinical psychologists (R, S and W) and the life history abstracts of the 20 DEF patients were submitted to three other clinical psychologists (X, Y and Z). They were asked to answer the ten items of the questionnaire from the information contained in the life history abstract alone. These psychologists averaged 7½ years of clinical experience.

RESULTS

The Reliability of Interpretation

We are interested in the relative agreement between Rorschachers and between control judges and in the relative reliability of Rorschach scoring and interpretation. The application of the Pearson coefficient of correlation to this kind of data is questionable. The phi coefficient was therefore used as the measure of degree of relationship.

The degree of agreement between Rorschachers on the first nine items of the questionnaire is presented in the top half of Table I.

(Item 10 is presented separately in Table II). The answer categories of each item were assigned numbers, e.g. for item 1:

- 5 Very Superior
- 4 Superior
- 3 Bright
- 2 Average
- 1 Dull

Rorschachers A, B and C's judgments on this item were tabulated in a single combined frequency distribution, the median obtained and all judgments above the median were *High*, all judgments below *Low*. The same procedure of dichotomizing the judgments was followed on all nine questionnaire items. Rorschachers A, B and C averaged a phi coefficient of

TABLE I—Agreement among the Different Pairs of Rorschachers and Control Judges on Questionnaire items: phi coefficients

Rorschacher pair	1	2	3	4	5	6	7	8	9	Mean for each pair
A and B.....	.38	.06	.12	.48	.33	.10	.29	.48	.37	.29
A and C.....	.36	.06	.12	.05	.36	.41	.39	.89	.20	.32
B and C.....	.58	.39	.80	.25	.45	.47	.29	.54	.18	.45
D and E.....	.73	.05	.89	.29	.39	.12	.21	.31	.33	.37
D and F.....	.19	-.20	.47	-.07	.42	.54	.29	.59	.45	.30
E and F.....	.41	.20	.36	.31	.30	.10	-.06	.49	.31	.27
Mean for each questionnaire item										
Rorschachers.....	.44	.09	.46	.22	.38	.29	.24	.55	.31	.33
Control judges.....	.56	.31	.44	.12	.43	.41	.10	.08	.36	.31
t value.....	1.38	2.53*	.12	.75	.71	1.05	1.56	4.27**	.83	.29

* Significant at the 2% to 5% level

** Significant at the 1% level

Overall Mean

TABLE II—Comparison of Agreement among Rorschachers and among Control Judges on item 10

	Average number of agreements on diagnosis	Predicted by chance	t	P
Rorschachers.....	5.2	2.4	5.73	1%
Control judges.....	3.8	4.6	.....	.....
t.....	1.54			
P.....	10% to 20%			
	Average number of agreements on diagnosis, with "presence" agreement	Predicted by chance	t	P
Rorschachers.....	9.8	4.6	9.40	1%
Control judges.....	3.8	4.6	.....	.....
t.....	6.83			
P.....	1%			

+ .35 and Rorschachers D, E and F averaged + .31. The lack of significant difference between the two sets of data justifies the combination of data of the two duplicate experiments.

The questionnaire items differ among themselves and although the differences are not large, item 8 on sensitivity in human relationships stands out as the best and item 2 on intellectual efficiency stands out as the poorest. The weakness of item 2 is striking because Rorschach literature abounds with statements about the advantage of the Rorschach test over standardized intelligence tests in discriminating between intellectual capacity and intellectual functioning.

The bottom half of Table I presents the comparison between Rorschachers and control judges on the first nine questionnaire items. Differences between Rorschachers and control judges are small and non-significant² except for items 2 and 8. For items 1 and 2, intellectual capacity and intellectual efficiency, the control judges all reported utilizing the educational and occupational level of each subject and with these simple facts were able to agree better than the Rorschach workers. On item 8,

sensitivity in human relationships, the Rorschachers agreed significantly better than did the control judges and on item 7, emotional control, the agreement of the Rorschachers is better although the difference is not statistically significant. This suggests that we have slanted our questionnaire items to the disadvantage of the Rorschach test. The first half of the questionnaire deals with intellectual functioning, drive and work habits. It is on the second half of the questionnaire which emphasizes emotional behavior and symptomatology that the Rorschachers do relatively better.

This is borne out in Table II. The control judges do poorly in selecting the outstanding symptom or diagnostic feature; one judge described answering item 10 as "blindman's buff" and another called it "pure guesswork." The top half of Table II refers to absolute agreement, i.e. the number of protocols (out of 20) on which two Rorschachers or two control judges agreed on the outstanding symptom or diagnostic feature was counted up and averaged for the six pairs of Rorschachers and six pairs of control judges.

Several of the Rorschach interpreters checked more than one symptom, indicating which they considered primary and which were merely present. Rorschachers might therefore agree

² A question may be raised as to the applicability of the "t" test here. A new statistical test for the significance of differences between phi coefficients may show some of the "p" values to be inexact.

about the *presence* of a particular symptom or diagnostic feature even though one counted it as outstanding and the other as secondary. If agreement in this sense is considered, the Rorschachers' average number of agreements shifts from 5.2 to 9.8. The control judges never checked more than one symptom so that their average remains unchanged, 3.8 agreements. When Rorschachers and control judges are compared, Rorschachers agree significantly better in diagnosis. The Rorschachers agree among themselves on diagnosis significantly better than chance.

THE RELIABILITY OF SCORING

Since all Rorschachers used the system of main and additional scores, each main score was weighted 1.0 and each additional score 0.5. As was done with the questionnaire data, the scores of the three Rorschachers (A, B and C or D, E and F) were tabulated in a single frequency distribution. Scores above the midpoint were *High*, those below *Low*. This conversion of continuous into dichotomous distributions means that the phi coefficients obtained are conservative estimates of the degree of relationship but this method was used in order that agreement in scoring be comparable with agreement in interpretation.

The phi coefficients obtained on the six pairs of Rorschachers were averaged. The mean phi coefficients of agreement in scoring W, D d, Dd S, M, m, k, FK, F, FC, CF, C, H, Hd, A and P were significant at the 1% level. The mean phi coefficients of agreement in scoring FM, K, Fc and Ad were significant at the 5% level. Only in scoring C' and c was the agreement non-significant statistically. When the overall mean phi coefficient of scoring, +.64 is compared with the overall mean phi coefficient of interpretation, +.33, a t value of 6.89 is obtained, significant at the 1% level. Beyond question, Rorschachers agree better in scoring protocols than in interpreting them.

The question may be put: *are the protocols on which Rorschachers agree in scoring the same protocols on which they agree in interpretation?* An Interpretation Agreement Score was obtained for each protocol: if all three Rorschachers rated a protocol on a given questionnaire item as *High High High* or *Low Low Low*, this was counted as an agreement. The maximum Interpretation Agreement Score for any given protocol was, then, nine (item 10 was omitted). In the same way, a Scoring Agreement Score was obtained. When these two sets of scores are correlated, the Pearson coefficient of correlation is $-.11$. The ABC cases alone yielded an r of $-.10$ and the DEF cases yielded an r of $-.12$. The answer then is that the protocols on which Rorschachers agree in scoring are by no means the same protocols on which they agree in interpretation. The tendency toward an inverse relationship may be accounted for to some extent by the fact that the long protocols with many responses tended to be high in scoring agreement but low in interpretation agreement.

Another question related to agreement in interpretation among Rorschachers may be raised. The Rorschachers were asked at the outset to list the Rorschach scoring factors, qualitative and quantitative, which they considered relevant to each questionnaire item. The amount of agreement among Rorschachers as to the relevant scoring factors differed from item to item. *Are the questionnaire items on which Rorschachers agree more about the relevant scoring factors the same questionnaire items on which they agree more in interpretation?* When questionnaire items are ranked in order of agreement about relevant scoring factors and ranked in order of agreement in interpretation a rho of $+.85$ is obtained. It would seem then that when Rorschachers agree more on what is relevant to some aspect of interpretation, they

are more likely to agree on that interpretation.

DISCUSSION

It is quite evident that the inter-examiner reliability of the Rorschach is low as gauged by the methodology of this study. One may question whether a questionnaire is an appropriate instrument for studying Rorschach reliability. While there is much to be said for the method of matching interpretation reports, it is still to be expected that independent Rorschach interpreters will answer questions about a particular subject's intelligence, emotional behavior, symptoms, etc. in approximately the same way. In a questionnaire methodology, the *global* aspect of Rorschach interpretation is retained because the interpreter is free to use any and all of the scoring and content in answering the questions put to him.

The real and basic problem here is: what are the questions to ask or, put even more broadly, what is the Rorschach test supposed to test? The results of the preliminary survey of Rorschachers' opinions done by the writer were essentially consistent with the textbooks and manuals of Rorschach interpretation. Significantly enough, these Rorschachers agreed most of all that the Rorschach tests the following:

- functioning under stress, emotional control, control of anxiety
- intellectual level, functioning and efficiency
- sexual attitudes and sexual behavior
- human relationships, emotional relationships
- dependence and dominance

Yet, in the questionnaire used, item 2 dealing with intellectual efficiency, item 7 dealing with emotional control, item 6 dealing with passivity and assertiveness, and item 9 dealing with sexual adjustment were among the poorest. The existence of agreement about what the Rorschach is supposed

to test does not necessarily make for agreement in those areas.

It may very well be that the Rorschach cannot and should not be required to stand alone. In a clinical work situation, the Rorschach test is used in conjunction with life history material, with interview cues and with the results of other tests. In this context, the Rorschach test results may contribute a good deal but it is a good possibility that the Rorschach test *by itself* cannot meet rigorous scientific and statistical criteria for reliability and validity. The proper definition of *global* interpretation may have to include more than the test responses themselves.

Another possibility presents itself: there may be certain aspects of Rorschach interpretation which can be made from Rorschach test data alone and which can stand up under tests of reliability and validity. Results with the questionnaire used in this study were uneven. (One important practical limitation in evaluating the obtained results is the absence of any information about the reliability of the questionnaire items themselves. Since the questionnaire was not pre-tested, the results obtained with it must be evaluated tentatively.) Questionnaire item 8 on sensitivity in human relationships proved to be a good one. When the Rorschachers in this study agreed more about the scoring factors relevant to a particular questionnaire item, they agreed more in interpreting that item. Item 8 ranked second in agreement among Rorschachers about the relevant scoring factors (item 1 was first). It is significant that items 2 and 4, which showed the lowest reliability in the questionnaire, also showed the lowest agreement about relevant Rorschach scoring factors. It seems clear then that where Rorschach workers can come to agreement about the scoring and content material relevant to an aspect of interpretation, they will be much more consistent with each other in interpreting that aspect than in inter-

preting aspects in which no such agreement exists.

This raises the question as to whether the agreement among Rorschach interpreters in this study would have been improved if there had been discussion of the questionnaire. It is the impression of the writer that it would have, in spite of the conclusion by Forer, Farberow, Meyer and Tolman that, "The group learning process did not lead to consistent increases in interrater agreement on judgment of signs or diagnoses," (2, p. 351). The Rorschachers referred to were staff psychologists in the same agency and clarification and agreement may have reached "its apparent limit" before weekly conferences were begun. Agreement among the Rorschach interpreters in this study could have been expected to improve, however, if conferences and discussions took place about the handling of each questionnaire item, i.e. about the different Rorschach scoring and content factors related to each.

The relatively good agreement among the Rorschachers in this study on item 10, the outstanding symptom or diagnostic feature, is encouraging. The Rorschach test is rooted historically and has bloomed for the past thirty years in the problems of psychopathology. The number of studies and the amount of data available on normal individuals is relatively negligible. We know virtually nothing about the Rorschach counterparts of constructive, adaptive behavior. There is, however, an enormous amount of Rorschach literature available on Rorschach indicators of schizophrenia, neurosis, organic brain disease, etc. The Rorschach test is a diagnostic instrument in a double sense: it may yield a diagnosis of certain psychopathological trends and it is supposed to yield, in addition, a "personality diagnosis," i.e. a description of the subject's personality traits and the dynamic interplay between these traits. The indication of the present study is that the Rorschach test is

weak in the inter-Rorschacher agreement on the latter.

SUMMARY

1. Forty Rorschach protocols were randomly divided into two sets of twenty protocols. One set (ABC) was submitted to three Rorschachers A, B and C and the other set (DEF) was submitted to three Rorschachers D, E and F for scoring and interpretation. The Rorschachers were also given a brief abstract of the subject's history. Interpretation involved answering ten questions about the subject's intelligence, personality traits and diagnosis. The life history abstracts were submitted to six control judges who were asked to answer the same ten questions.

2. In general, the Rorschachers did not show significantly better agreement than did the control judges. On two items, sensitivity in human relationships and diagnosis, agreement among Rorschachers was significantly better than among control judges. The control judges agreed significantly better than the Rorschachers on the question of intellectual efficiency.

3. Agreement among Rorschachers in scoring Rorschach protocols was significantly better than agreement on the questionnaire items. The relationship between the reliability of scoring and the reliability of interpreting the test protocols was small and inverse, —.11.

4. The Rorschachers listed those Rorschach scoring and content factors they considered relevant in answering each questionnaire item. A high degree of relationship was found between their agreement on this listing and their agreement on the different questionnaire items.

5. It is concluded that the inter-examiner reliability of the Rorschach test is not an all-or-none problem. It would seem that there are certain aspects of interpretation which can be made from the test data and which can stand up to tests of reliability. More discussion and methodological

study are needed in the Rorschach counterparts of personality traits and adaptive behavior.

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A Critique of Current Methods of Rorschach Scoring

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INTRODUCTION

Relatively little work has been done so far on the rationale of Rorschach scoring. Furthermore, in the few publications on the subject no attempt has been made at a systematic analysis in terms of what the various scores refer to. Relevant questions in this connexion are: Does the score refer to qualities of the ink blots—if so, to what qualities? Or does it refer to associative processes in the subject's mind at the moment of, and immediately prior to, giving the response? Or does it reflect the relationship of a particular subject's particular response to similar responses which were given by a population of subjects of which this particular subject is taken to be a member? An endeavour will be made here to show that by means of such and similar questions inconsistencies and internal contradictions of scoring come to the fore. Suggestions will also be offered for changes in scoring and administration in order to remedy these shortcomings.

- 1) Is an inquiry into the rationale of Rorschach scoring necessary and/or profitable?

It could be argued that empirical validation is not only more important than a logical analysis of scoring methods but also renders the latter unnecessary. After all, improving the rationale of scoring does not make a test more valid whereas empirical validation, of course, does.

It is felt that this argument in its extreme form holds little water. Firstly, a scoring method or a few alternative scoring methods have to come first and validation after; secondly, as a corollary to the first point, the degree of the test's validity is a func-

tion of the quality of its scoring system which in turn depends upon such factors as logical consistency of scoring. Thus, an inquiry into the rationale of scoring indirectly also contributes to the validity of the test. Furthermore, it may help settle differences in scoring between the various "schools" by clarifying the issues involved.

- 2) *Raison d'être* of projective techniques and major difficulties in their use.

Rosenzweig (9) makes the point that the major advantage of projective techniques is that by using them we are able to penetrate to the more permanent and constant, deeper layers of personality thus enabling us to make better predictions. To extend his argument, one could differentiate between "extrapolating" or "situational" prediction, on the one hand, and "dynamic" interpretation on the other hand. In the case of the former type of prediction its accuracy depends on the similarity between the test situation and the criterion situation to which we intend to predict; a good example of this type of prediction in pure culture is the WOSB's procedure (4). "Dynamic" prediction, on the other hand, does not rest on the assumption that the test we predict from is homologous to the situation we wish to predict to; other things being equal this factor could be expected to make for better predictions. However, with "dynamic" predictions there is a considerable "inferential jump": from the test performance, underlying structures or processes are inferred which, in turn, enable us to make predictions. This inferential jump can be expected to lower the precision of our prediction.

Thus, the scoring, in other words translation of significant elements of the test performance into a code, becomes a link in the long chain leading from test performance to prediction. Although the above holds for psychometric tests as well, scoring being a more complex procedure in the Rorschach it becomes a more vexing and all-important factor with the latter. Thus, an examination of the rationale of scoring must be the starting point for any move to improve the validity of the Rorschach.

3) Variants of scoring schemes.

A scoring unit can be arrived at

(i) on the basis of the response proper

(a) by means of correlation with some criterion measure. In the case of psychometric tests the criterion is either performance on the test as a whole or performance on an outside criterion. Historically, an example of this kind of scoring unit in the Rorschach is the Do score which Rorschach thought was pathognomonic of mental deficiency. Thus, this scoring scheme is based on the relationship between response, *i.e.*, the expressive end-product of a thought process started off by test stimuli, on the one hand, and some kind of characteristic it is expected to predict, on the other hand. It follows from this that it depends on experience with a population disregarding the process by means of which the individual arrives at a response. That is, the scoring system takes account of what the response is, without, however, differentiating between several ways of arriving at the same end product. This criticism holds for all scoring systems based only on the response proper as well as for factor-analytic studies; both the relative importance and the function of "factors" may differ from individual to individual.

(b) On the basis of some formal characteristic of the response, *e.g.*, content on the Rorschach or aggres-

sive or submissive remarks on the TAT.

(c) By means of the frequency of the response in question in the population; examples are the frequency approach to the Word Association test (8) and the popularity-originality dimension in the Rorschach.

(d) By categorizing the relationship between stimulus and response, *e.g.*, location score in the Rorschach or omission of some person or object from the story in the TAT.

(ii) By means of a phenomenological analysis of the response. Thus, instead of scoring what the response is, one categorizes the process or rather the introspective perception of the process by means of which the response was arrived at. It can be argued that phenomenological scoring gives, other things being equal, more information about the subject than any other scoring method. It yields information about the subject *qua* individual and not only as a member of a population; or, to be more precise, it differentiates between individuals giving the same response. An important difference, then, between phenomenological and non-phenomenological scoring is that the former is done in the frame of reference of the subject, entering into his perceptual field, so to speak. The best examples for phenomenological scores are the determinants in the Rorschach; they will be the main concern of our discussion. It follows from what has been said before that phenomenological scoring is eminently suitable for dynamic prediction as it categorizes processes underlying manifest behaviour; for this same reason the likelihood of error in interpretation is also reduced (if the score is a valid measure of what it is supposed to measure).

4) A discussion of Rorschach scores with particular emphasis on determinants.

Aspects of the response scored in the Rorschach:

(i) categorizing the relationship between stimulus and response. Two types of scores fall into this category:

(a) the location score defines the relationship of the area utilized in the response to the total blot area.

(b) Form level rating in terms of accuracy and specification is a score based on goodness of fit of the blot area to which the response was given to the corresponding object in nature. Organization, however, falls into a different category and will be discussed later.

(ii) The content score is based on a formal characteristic of the response.

(iii) Popularity or originality is scored according to the frequency of the response to a particular area of a particular card in a particular population.

(iv) Two scores are based on phenomenological criteria:

(a) the organization aspect of the form level rating which refers to the organizing process by means of which the subject arrives at the response;

(b) determinant scores.

Let us, then, attempt to define what is meant by determinant score in the Rorschach. There are two criteria, a general and a specific, constituting a determinant score.¹ Firstly, the determinant score designates the salient feature(s) in the subject's perception in the test; this criterion is vague but holds for all determinant scores. The main objection against it may be that it lacks anchoring in the test material; thus, it cannot be directly used as a description of the subject's verbal behaviour in relation to the test material. According to the second criterion the determinant score designates that feature or those features in the stimulus material which appear(s) to have contributed to producing the response.

¹ Also needed, of course, is a system of determining features in perception. It is felt that too little thought has been given to selecting the most important and most useful determining features.

This definition is less vague than the first one and is anchored in the stimulus material; consequently, it provides a link between stimulus, on the one hand, and perception and perceiver, on the other. Yet it has a major disadvantage: it does not account for movement and for Klopfer's three shading variants, c, K, and k, as determinants.

It is felt that there is insufficient differentiation between "objective" and "subjective elements" in scoring. By "objective stimulus element" I now mean the feature in the stimulus material which produces the response in the subject and by "subjective stimulus elements" I mean features projected into the stimulus material by the subject. For example, in the case of the popular response to Card III the "objective stimulus element" is almost invariably form and the "subjective stimulus element" more often than not human movement. The latter is not a feature of the blot; it is projected into the blot by the subject. It can be argued, of course, that it must be a feature of the blot; otherwise the human movement response would not be a popular. However, it must be borne in mind that the phrase "feature of the blot" was now used in a sense different from how I used it. The extreme case would be the *m* response where the determinant has a "subjective stimulus element" only.

Before we go any further I wish to clarify this issue. The objective stimulus elements are those features of the blot which produce the response in the subject. Let us now examine the implications of this statement for movement and Klopferian shading responses.

If movement is perceived in the blots it can be perceived in one or more of three ways:

(i) in the case of kinaesthetic movement responses the process appears to be a most complex one. Mainly on the basis of form perception the sub-

ject experiences, however dimly, some empathy with the movement, and it is this kinaesthetic proprioception which is then scored with the appropriate movement score. Thus, in this case an element of proprioception, not exteroception, is being scored.

(ii) Movement can be perceived by means of an associative process. Thus, an object may be perceived which is usually seen in motion in nature and is therefore also seen as moving; or a sign is perceived which is stereotypically associated with motion, e.g., \neg as explosion (2).

(iii) It is perceived in relation to an implied background. I am referring to the fact that movement is not an absolute attribute of an object but can only be conceived of in relation to another object or group of objects or substance.

Naturally, the above three categories are not mutually exclusive.

It should be apparent that the above three criteria differentiate sharply between movement as a determinant, on the one hand, and other determinants, on the other hand. Criteria (i) and (ii) have as common elements the fact that the feature to which the movement score refers is a link in a process initiated by the stimulus, yet distinguishable from the immediate response to the stimulus. To use Rapaport's terminology (7), this feature is part of a "distant" response, using the word 'distant' in its descriptive and not in its dynamic sense. Criterion (iii) refers to the fact that movement is the only determinant which does not refer to an absolute stimulus attribute, i.e., a stimulus attribute which is independent of the relationship of this stimulus to other spatially and temporally contiguous stimuli.

The Klopferian shading score also refers to a "distant" response to the blot. B. Klopfer gives the following definitions (5, p. 126):

c: shading gives the impression of surface or texture.

K: shading gives the impression of three-dimensions or depth, either in the sense of diffusion (K or KF) or vista (FK).

k: shading gives the impression of a three-dimensional expanse projected on a two-dimensional plane.

It will be noted that all three definitions start with "shading gives the impression of ..." i.e., the objective stimulus element is in all three cases taken to be the same. Yet Binder's *Hd* (hell-dunkel), Loosli-Usteri's *Clob* (clair-obscur), and Schafer's *Ch* are scores in terms of the objective stimulus element; it is only through Klopfer's refinement that the shading score becomes a score in terms of both objective and subjective stimulus elements. It is a score in terms of the objective stimulus element insofar as it is a response to differences in shading and in terms of the subjective element insofar as the impression the shading gives is concerned.

Thus, there is an irreducible contradiction in the Rorschach concept of determinant. If what I called the subjective stimulus element is the basis of the determinant score, a hallucinatory determinant such as, to take a relatively mild case, a bright colour seen in an achromatic card, should be scored as such, that is as a colour response. If, however, the objective stimulus element is used here as a basis, it is very likely that the phenomenological approach will not yield a determinant score; if it will the score must necessarily be different as it can only be a score in terms of objective perceptual features and, as the card is achromatic, the score must be other than colour.

It follows, then, that there always may be cases where there remains an unscored gap in the perceptual process between stimulus and response. Using the subjective stimulus element as a basis the gap, if it occurs, is between stimulus, on the one hand, and

perceptual feature,² on the other; using the objective stimulus element there may be an irreducible gap between stimulus features³ and response, the perceptual feature remaining an unknown.

Therefore, from the point of view of objectivity of scoring, the starting point in determinant scoring should always be the objective stimulus element; determinant scoring on the basis of the subjective stimulus element should be resorted to only if there are some features *in the response* still unaccounted for in terms of the objective stimulus elements. The implication here is that the Rorschach being a standardized test the first objective in scoring is to establish or rather categorize a relationship between stimulus and response.

However, the contradiction in determinant scoring goes further. In the case of co-determinant scores (e.g., FC) the primacy of the co-determinants (FC or CF) is decided either on the basis of "objective" or on the basis of phenomenological criteria. What happens if the two clash? Let us take colour responses as an example. There are two main criteria on the basis of which one is to decide whether form or colour is primary if there is both a form and a colour element in the response.

(i) Has the object to which the blot is equated a definite shape? If so, the score is FC. This is an objective criterion, *i.e.*, on its basis any subject giving that response to a certain location will be credited with an FC score irrespective of what produced the response in his phenomenal field.

(ii) Which was, subjectively, the more important co-determinant producing the response? This is a subjective, phenomenological criterion; thus, it may happen that two identical responses to the same area may get a different score using this criterion. Thus, according to this criterion the response "coral" to the pink portion on card X could be either FC or CF. What is to happen, then, if the two considerations clash, if, as in this case, the "objective" score is CF, the phenomenological, however, happens to be FC?

This is not an argument against using the "objective" criterion of definiteness of shape as a basis for determining the primacy of co-determinants; in most cases it decides the issue in terms of phenomenological primacy as well. However, it is maintained that if there is a clash between the objective and the phenomenological criteria of primacy of co-determinants, the scoring should take note of this fact.

A further complication arises if a co-determinant score is reserved for a specific sub-category of responses, e.g., Klopfer's FK being reserved for three-dimensional perspective responses whereas K and KF are scores for diffusion. As the scores stand, it can be at least disputed if FK lies on the same perceptual continuum with KF and K. It is suggested that there is no good reason why FK should be retained as a restrictive score.

In phenomenological scoring there is always an element of uncertainty. One of the elements of uncertainty which cannot be resolved is whether or not a determinant was used by the subject in the performance proper or whether it has occurred to him in the inquiry only (see below). From the fact that there are various degrees of uncertainty in scoring determinants it follows that there are cases where a decision as to what score is more appropriate cannot be made on the basis of the response and the inquiry only. In those cases there seem to be two

² Perceptual features are all those attributes of the stimulus as perceived by the subject on the interactive aggregate of which that particular individual's perception is based.

³ Stimulus features are all those attributes of the stimulus on the interactive aggregate of which perceptions are based (wave length for colour, spatial relations for form, differences in intensity of light reflected for shading, intensity of light reflected for achromatic colour).

possible means of deciding the issue, both based on the concept of statistical regression:

(i) On a population basis. The score given is based on the determinant most frequent for that particular response in the population of which the subject is a member.

(ii) On a subject-inclination basis. The scoring is based on the observed fact that in other responses to the same objective stimulus elements the subject tends to use one determinant more often than others.

Whether criterion (i) or (ii) should be used depends on how typical a member of the normative population the subject is. As from the point of view of objectivity of scoring the use of criterion (i) is preferable. Criterion (ii) should be used only if, firstly, there is strong evidence for the subject's tendency to use a certain determinant in his response to certain objective stimulus elements, and secondly, if there is good evidence for the subject's being markedly atypical.

Now let us look into a further complicating factor with determinants: Levin (6) claims that there are "two tests in the Rorschach": firstly, the responses in the test proper, and secondly, the subject's performance in the inquiry. He says that current methods of Rorschach scoring fail to differentiate between Test A (in the performance proper) and Test B (in the inquiry). In the main his criticism is twofold. On the one hand, he feels that what he loosely calls introspection in the inquiry may have little validity; yet he feels that, on the other hand, information may be lost by failing to differentiate between the two tests, as Test A "would reflect more of the need and drive states, while Test B would reflect more of the defense systems and other ego functions."⁴

Levin's criticisms are legitimate

enough as far as they go. Yet it is felt that the problem cannot be wholly resolved as, in the case of determinants, the only alternative to scoring on the basis of the inquiry—excluding the cases where the response proper is sufficient for scoring—would be to assign a score solely on the basis of the response proper. Here, the implication is that the score would be given in terms of what the Germans call 'Leistungspsychologie', *i.e.*, considering the end product only and disregarding the process by means of which the subject arrived at his response; the only exception would be a response so complete that an inquiry into it would be unnecessary anyway. Thus, the score would be arbitrary (the phenomenological score as seen by the individual who decides) or, at the best, the most frequent phenomenological score in the population (see below). If the latter kind of scoring is adopted, scoring in terms of Test A and Test B separately may supply additional information. However, this would involve scoring norms for responses (*i.e.*, relative frequencies of determinants "objective determinants," to be more precise, see below) for a given response to a given area. It should also be noted that the terms Test A and Test B were now used in a sense distinctly different from how Levin used them. The determinant score in Test A here is not, as Levin assumed, the "true" determinant in the performance proper for the simple reason that it cannot be ascertained. However, Levin's criticism still applies to the phenomenological determinant score. It should be self-evident that the error cannot be eliminated; it can, however, be reduced considerably by systematically varying the objective stimulus elements in the inquiry.

Baughman (1) suggests three alternative methods of utilizing modified blots. Firstly, they may be used after the inquiry by presenting the subject with the required modified card and ask him in what way, if any, his per-

⁴ Recent work on the relation of Rorschach free association to inquiry seems promising in this connexion (3).

cept is modified. A second possibility would be to begin the inquiry period with them. A third method was proposed by Zubin in a personal communication to Baughman. The essence of his suggestion was that each of the modified series be presented to groups of Ss in the usual manner. Tables would then be constructed showing the number of times each response occurred in each series and these tables would then be used as standards for scoring determinants. The essential, secondary, or insignificant role of each determinant for a specific response could be assessed by reference to the distribution of the response throughout the various series.

However, it should be borne in mind that, using the modified blots, one systematically changes the objective stimulus elements. Thus, this method is of direct assistance for scoring in terms of the objective stimulus elements only and not for scores in terms of subjective stimulus elements.

My objection against Zubin's proposal is that the scores derived from his method would be the most frequent determinants for the response in question in the population but not necessarily for a particular subject. To be sure, the Rorschach can be used in that way but by using this type of scoring we necessarily lose information about our subject.

5) Suggestions for changes in scoring and in administration.

Based on the foregoing analysis, the following changes to scoring and administration are suggested:

(i) The scoring of determinants.

(a) The category "determinants" as currently used is a hybrid amalgamation using both objective and subjective stimulus elements. Therefore, it is suggested that in scoring a formal distinction be made between "objective determinants" (Klopfer scores F, C, C', and Schafer's Ch, based on objective stimulus elements) and "subjective determinants" (Klopfer scores

M, FM, m, k, K; and hallucinatory or illusional responses). The hypothetical case referred to earlier where a C response was given to an achromatic card would then be scored as C' or Ch in the column for objective determinants, and as C in the column for subjective determinants. Thus, every response would have an objective determinant score, and some responses would also have a subjective determinant score. The popular human response as a W to card III would then be scored W F M H P (form level rating remaining optional). This scoring method would naturally alter the meaning of such measures as F%, the new F% being the old F% + (M+FM)%.

(b) If a determinant cannot be scored on the basis of the response proper and inquiry into the response, the most frequent determinant score in the population for that response should be given except for very atypical Ss who consistently use the same atypical determinant in their response to given objective stimulus elements. Such discrepancies, if they occur, will be noted. The scoring will then be based on that S's consistent trend.

(c) If in the scoring of co-determinants there is a clash between objective and phenomenological criteria, the response should be scored both in terms of the objective criterion (in the objective determinants column) and in terms of the phenomenological criterion (in the subjective determinants column).

(d) Klopfer's FK score should be generalized to all responses with a definite shape where diffusion is a subjective stimulus element.

(ii) Form level rating

It is felt that in form level rating organization as a phenomenological aspect of the response should be kept separate from accuracy and specification. The latter two, after all, refer to the end-product and thus to a different predictive level from the former which refers to a process. In other

words, accuracy and specification refer to what is produced and organization to how it is produced; the former two are closer to situational, the latter to dynamic prediction.

(iii) The inquiry.

It seems to me that Baughman's second method where the modified cards are presented after the inquiry has most to recommend it. The main danger with this method is that the inquiry may impose a frame of reference upon the subject which in turn may influence his reactions to the modified cards. Therefore, the utmost care has to be taken to be nondirective in the inquiry, even on card X. It is felt that this method is preferable to starting the inquiry with the modified cards as by doing that a number of diagnostically valuable verbalizations may be lost.

SUMMARY

After emphasizing the importance of rationale a scheme categorizing scores was discussed. It was then shown that Rorschach scores and/or aspects of scores fall into the following categories: (i) Scores categorizing the relationship between stimulus and response; (ii) scores based on a formal characteristic of a response; (iii) scores based on the frequency of the response in the population; (iv) scores based on phenomenological criteria. An in-

ternal contradiction in determinant scoring was then pointed out in that some of the criteria used are phenomenological, others objective; it was suggested that the two aspects be separated into two formal scores, if there is a discrepancy between the two. It was further argued that in the case of determinants maximum information is necessarily gained by scoring in the subject's frame of reference. Finally, the use of Baughman's modified cards after the inquiry was recommended as a means to render determinant scoring more reliable.

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The Relationship Between Manifestations of Hostility in Projective Tests and Overt Behavior

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INTRODUCTION

The purpose of this study is to investigate the nature of the relationship between overt hostility in the normal classroom behavior of children and the hostile content they produce in their Rorschach and Make-A-Picture-Story (MAPS) protocols. Previous studies and clinical theory in this area suggest several specific hypotheses for investigation. These hypotheses may be stated as follows:

1. The relationship between hostile content in the Rorschach and overt hostility will be curvilinear.
2. There will be a positive, linear relationship between the hostile content on the MAPS and overt hostility.
3. The hostile content of the Rorschach and of the MAPS, when used together, will provide a better predictive index of overt hostility than either measure used singly.

Hypothesis 1 is an expression of the often-made assumption that hostile content in the Rorschach is an expression of covert hostile tension. Where such covert hostile tension is characteristically high, it would be presumed that the individual is unable to discharge it adequately through behavioral or other channels. Hence, high levels of hostile content in the Rorschach would ordinarily be associated with low overt hostility. Conversely, where the individual is able to release his hostile tensions via behavioral or other channels, the characteristic level of covert hostile tension would presumably be in the intermediate or low range. These assumptions would thus

imply a curvilinear relationship between hostile content scores on the Rorschach and overt hostility.

Hypothesis 2 is based on a common assumption in respect to thematic material in general and to the MAPS in particular. It is frequently assumed that thematic materials allow the subject to become aware of the significance of his story responses just as he may become aware of the hostile nature of his actual behavior. (The significances of the responses to the Rorschach blots are probably not as apparent to the subject.) This awareness of the significance of his responses presumably permits the subject to modify and interpret his own responses to the MAPS in the same way that he is able to interpret and modify his overt behavior. On this basis, it would be expected that there would be a close correspondence between story stimuli and real life stimuli and that hostile content on the MAPS should approximate a direct, linear relationship to overt behavior.

Hypothesis 3 is an outgrowth of the first two hypotheses and is also in line with the common clinical practice of using both the Rorschach and a thematic test for diagnostic purposes. The implication is that the two types of instruments tap different aspects of the personality so that when they are used together they give a more accurate basis for prediction of behavior than either instrument used alone.

METHOD

To test the hypotheses of this study, it was necessary to obtain reliable and

clinically meaningful measures of the typical patterns of overt hostility displayed by a group of children and to compare these measures with a reliable quantification of the hostile content in their Rorschach and MAPS protocols. It was deemed desirable that the children be relatively unselected in terms of hostility and its manifestations and that they should display a relatively wide range of overt hostility since such heterogeneity would aid in the detection of the hypothesized relationships.

Subjects: The population of this study consisted of thirty white male children who were enrolled in the Clinical School of the University of California at Los Angeles for remedial instruction in reading. They ranged in age from nine to fifteen years and there were either two or three children representing each six month age interval throughout this range. Each child had been given the Stanford-Binet, The Wechsler Intelligence Scale for Children, or the Wechsler-Bellevue. The group ranged from borderline to very superior intelligence. However, for the two cases which were below average in intelligence test scores, the examiners' reports indicated that the scores were very likely an underestimate of the child's intellectual capacity. The distribution of the various levels of intelligence showed the group to be a relatively representative sampling of the normal intelligence range.

From preliminary observations, it appeared that the distribution of overt hostility in the group approximated a normal curve. Thus, a few children typically displayed a relative lack of overt hostility, a few were given to frequent and intense acting-out of hostile impulses, but the majority seemed to fall midway between these extremes.

One factor of note is that all children enrolled at the Clinical School are cases of reading retardation. There have been no studies that show any specific relationship between reading

retardation and hostility. However, on a speculative level, the frustrations and conflicts which might be induced by reading problems would probably serve to heighten the mean hostility level in the group but, unless this served to modify the range of hostility, it would not necessarily influence relationships between test and behavioral measures of hostility.

Procedure: The Rorschach and the MAPS were administered individually to each of the subjects by a single examiner. The children were tested in a random order over a three-week period during which normal school routine prevailed. The tests were counterbalanced by alternating the sequence of administration from one subject to the next. In general, two subjects were tested in the morning and one in the afternoon. This testing procedure randomized situational factors such as fatigue, classroom arguments, time of day, or systematic shifts in the examiner's mood.

The Rorschach: The Rorschach was administered according to Klopfer's (4) technique with certain modifications required by this subject population. If the child gave only one response to the first card, he was encouraged by the statement: "People often are reminded of several things in the card. Why don't you look at it again and see if it might suggest some other things too." Regardless of the outcome, no further prompting was used. In four cases, as a concession to restlessness and short attention span, the Inquiry was conducted after the completion of each card rather than waiting until the subject had responded to all ten cards. In all the other cases, the conventional method of Inquiry was used.

A scale for scoring hostile content in the Rorschach was constructed utilizing portions of the methods of Elizur (2) and Walker (8).¹ From this scor-

¹ To save printing costs, a full reproduction of this scale has been deposited with the American Documentation Institute. Order Document No. 4879 from American Docu-

ing technique a Rorschach Hostility Score (RHS) was obtained. Reliability of the scoring was obtained by selecting ten protocols at random from the thirty which were administered. All protocols were identified by code number only. These records were scored by the examiner and two other judges. All judges had administered more than one hundred and fifty individual Rorschachs. The RHS assigned to the ten records by the three judges were simultaneously compared, using the intraclass correlation coefficient, r' , according to the method suggested by Garrett and Zubin (3). A very significant inter-rater reliability was found, $r' = .90$. The F-ratio was 18.47 which is far greater than the .001 level of confidence. This high agreement indicated that it was acceptable to use the examiner's RHS values for all thirty protocols as the Rorschach data to be used in testing the hypotheses of this study.

The MAPS: A battery of eight background cards of the MAPS was chosen. The cards used were the Livingroom, Street, Bedroom, Bathroom, Dream, Schoolroom, Cellar, and Forest. The first five were suggested by Shneidman, author of the MAPS, as the most productive cards for a short battery. With the exception of the Bathroom, these cards were judged to be relatively neutral in stimulating hostile responses. The other backgrounds were expected to be approximately equal in the number of hostile themes elicited. A tally of the number of times each card received any type of scoring denoting hostility indicated that all, except the Bathroom card, elicited approximately the same number of hostile themes, ranging from fourteen to twenty responses. The Bathroom card elicited only three hostile scores.

The MAPS was administered according to the standard procedure in-

icated by Shneidman (6). The administration was probably facilitated by the fact that none of the children had seen this test before, and they responded to it as they would to a new game.

The MAPS protocols were scored according to the TAT Aggressive Content Scale developed by Stone (7).¹ Three scores were derived from Stone's scale, based on the number and intensity of hostile themes produced. The MAPS Hostility Score (MHS) was obtained by summing the full scoring weights assigned to each protocol. The Modified MAPS Hostility Score (MMHS) was obtained by summing the scores assigned to a protocol when the potential (P) scores had their weights cut in half. (A P score is given when the hostile act is not carried out in the story but is placed in the future or is seen as a wish or thought.) The MMHS, then, reflects not only the frequency and intensity of hostile themes, but also the extent to which they were actually acted out in the stories without modification.

The Hostility Control Score (HCS) was obtained by dividing the number of hostile themes in a record which were not P scores by the total number of hostile themes produced. This score, then, represents only the degree to which the hostile feelings in the subject's hostile themes were acted out in the story as overt hostility, i.e., were expressed without modification.

Using a table of random numbers, eighty stories were drawn randomly from the total of two hundred and forty stories which the subjects had told. These stories were scored by the examiner and two other judges. Rater reliability was checked by the use of the intraclass correlation coefficient and an inter-rater reliability of $r' = .89$ was found. This high degree of agreement indicated that the MAPS stories were judged with very high consistency so that the examiner's scoring of all thirty MAPS protocols could be used to determine MAPS hostility

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scores utilized in the testing of the hypotheses of this study.

*The Rating Scales*¹: Two rating scales were constructed using the Champney (1) method. One scale permitted the rating of Physical Hostility, the other the rating of Verbal Hostility. Quarrelsomeness, the third scale in the behavior rating battery, was taken from the Fels Child Behavior Scales (5). The raters were five teachers and one graduate assistant. Two of the classrooms had two teachers who divided the teaching day between them. The third classroom had only one teacher but she had been helped for four months prior to the time of the ratings by a graduate psychology student who had spent a minimum of one hour a day in the classroom. This student assistant served as the second rater for this classroom.

A pilot study conducted prior to the adoption of the rating scales gave the teachers experience in defining, observing, and recording overt hostile behavior in their pupils. Originally it was planned that the teachers should keep a running record of every instance of actual or potential overt hostility that occurred in the classroom during the day and that this daily record should serve as the measure of hostility for this study. The plan proved unsatisfactory because it was so time consuming that it interfered with the teachers' actual handling of the classroom. Even though it had to be abandoned, it served a useful purpose in clarifying the various categories of behavior that were to be rated on the rating scales so that the teachers were well-trained in making the type of observations necessary.

The ratings were made on a nine point scale, and the ratings for each child were indicated by a horizontal dash through a vertical nine centimeter line divided into one centimeter lengths. A rating of nine indicated maximum hostility. Each subject received a final score on each scale

which represented the average of the two ratings he had been given by his two teachers.

In order to avoid a positive transfer of judgment from one scale to the other, several rating scales dealing with non-hostile personality attributes were placed in between those used in this study. In the resulting sequence, Physical Hostility was first, Quarrelsomeness was fourth and Verbal Hostility was eighth in order of placement in the battery of scales. The halo-effect was also counteracted by placing the subjects in a different order on each of the scales.

The independence of the three ratings was tested in one operation using the intraclass correlation. The three scales were found to intercorrelate very highly, with an $r' = .87$, demonstrating that the children had very nearly identical scores on each of the three scales. This would indicate that any differences in the degree of relationship found between the various ratings and the projective test scores would be quite small.

A general reliability coefficient was computed for each scale by computing the intraclass correlation for the two ratings given each child. The reliability of all three scales was statistically significant beyond the .001 level of confidence.

Analysis of the Data: Two statistical measures were used to evaluate the hypotheses. The chi square was used to test the significance of relationships between experimental variables since its use does not require making any assumptions concerning the distribution of the data involved.

Whenever the degree of correlation between two variables was required, Tschuprov's coefficient, T , was used (9). Tschuprov's T is a contingency coefficient which is superior to the more familiar contingency coefficient, C , in that it expresses the degree of correlation in values varying between zero and one, regardless of the number of categories used.

To test the hypotheses of this study the test and behavior measures were divided as near their medians as the distribution would permit. The relationships between high and low portions of any two measures were plotted in a two-by-two contingency table so that the appropriate statistics could be calculated. The use of more than two categories was not possible, as the resulting contingency tables would have contained cells in which the expected frequencies would be below five, thus rendering the calculation of chi square invalid.

RESULTS

To test the hypothesis that the relationship between hostile content on the Rorschach and overt hostility is curvilinear, the Rorschach Hostility Scores (RHS) were divided into quartiles, the first quartile being the lowest fourth of the scores. The first and fourth quartiles were then combined, as were the second and third quartiles. These were then correlated with the three behavior ratings: Physical Hostility (PH), Quarrelsomeness (Q) and Verbal Hostility (VH). The significance and degree of association are shown in Table I.

All of the overt hostility scales showed a low but statistically significant correlation with the hostile Rorschach content. However, only the rating of physical hostility was related to the hostile Rorschach content at the .01 level of confidence.

TABLE I—The Relationship Found Between the Rorschach Hostility Scores and the Overt Hostility Ratings

Variables	Chi Square	P Level	T
RHS ₀ * and PH	8.60	.01	.54
RHS ₀ and Q	3.84	.05	.36
RHS ₀ and VH	5.24	.05	.41

* RHS₀ indicates that the Rorschach Hostility Scale was divided into quartiles with the first and fourth quartiles being grouped together and the second and third quartiles being similarly combined.

On the basis of the preceding finding, it was concluded that the first hypothesis was confirmed. The Rorschach hostile content displayed the predicted curvilinear relationship to overt hostility.

The second hypothesis predicted a positive relationship between the hostile content of the MAPS and overt hostility. Three measures of hostile content were used in testing this hypothesis: the MAPS Hostility Score (MHS), the Modified MAPS Hostility Score (MMHS), and the Hostility Control Score (HCS). All three test measures of hostile thematic content were divided at their approximate medians, as were the three overt hostility ratings. Each test measure was compared with each of the behavior scales, using the two-by-two contingency table. The significance of the resulting relationships and their correlations are presented in Table II.

The results indicated that, of the three methods for evaluating hostile content expressed in the MAPS, only one was related to the overt hostility ratings. Neither the MHS nor the MMHS scores even approached a significant relationship. The HCS scores showed a low but statistically significant correlation with the rating of Physical Hostility. The correlation

TABLE II—The Relationships Between Three Measures of Hostile Content in the MAPS and the Overt Hostility Ratings

Variables	Chi Square	P Level	T*
MHS and PH	.55	.20	
MHS and Q	.20	.20	
MHS and VH	.20	.20	
MMHS and PH	1.22	.20	
MMHS and Q	.62	.20	
MMHS and VH	.62	.20	
HCS and PH	8.57	.01	.54
HCS and Q	3.80**	.10	.36
HCS and VH	3.10	.10	.32

* Contingency coefficients were not calculated for relationships below the 20 per cent level of confidence.

** This value is very near the 5 per cent level of confidence of 3.84.

TABLE III—The Association Between HCS Scores and the Overt Hostility Ratings*

	PH		Q		VH	
	Low	High	Low	High	Low	High
High HCS.....	3	11	3	11	5	9
Low HCS.....	12	4	9	7	11	5

* All variables were divided as close to their medians as the data would permit.

with the rating of Quarrelsomeness was slightly under the .05 level of confidence. The relationship of the HCS scores to the ratings of Verbal Hostility fell between the .05 and .10 levels and thus did not reach an acceptable level of confidence.

This hypothesis, further, required that any obtained relationship should be positive. The appropriate tabulation for HCS and the overt hostility scales are shown in Table III.

These results indicated that only one of the three methods for evaluating hostile content in the MAPS was related to overt hostility ratings. HCS was very significantly associated with the rating for Physical Hostility and showed very nearly significant association with the ratings for Quarrelsomeness. All correlations were positive. These findings at least partially confirm the second hypothesis of the study.

The third hypothesis to be investigated predicted that the hostile content of the Rorschach and the MAPS, when used together, would show a stronger relation to overt hostility than either measure would by itself. This hypothesis was tested by determining if the quartile division of the RHS and the HCS used together would correlate higher with the behavior scales than either of these measures did singly. Therefore, the correlation between the hostile content scales was obtained by calculating a T from a chi square analysis of their relationship as indicated in the usual two-by-two contingency table. It was found that RHS_Q and HCS were related at the .10 level of confidence with a correlation of $T = .34$. The multiple correlation coefficients

of RHS_Q and HCS on the three behavior ratings were then calculated by use of the standard multiple regression equation, using the T values in place of the conventional Pearson correlation coefficients. The multiple correlation coefficients obtained are presented in Table IV together with the correlations of the individual hostile content scales with the behavior variables.

TABLE IV—The Single and Multiple Correlations of RHS_Q and HCS with the Ratings of Overt Hostility

	RHS_Q^*	HCS*	R_T^{**}
PH.....	.54	.54	.68
Q.....	.36	.36	.44
VH.....	.41	.32	.45

* Degree of correlation indicated by Tschuprov's Coefficient.

** Multiple correlation coefficient derived by substituting T values for r values.

From the table it may be seen that the third hypothesis is confirmed, since the multiple correlation coefficients were, in all instances, larger than the individual correlations, indicating that a combined use of the hostile content of the Rorschach and the MAPS did provide a positive increase in the relationship.

DISCUSSION

Hypothesis 1 which predicted a curvilinear relationship between hostile content on the Rorschach and overt hostility is supported by the present findings. One way of interpreting this curvilinear relationship is to view the Rorschach hostile content score as a measure of residual tension, i.e., tension which is not acted out in

overt behavior or discharged via other channels. The data show that the individuals who were in the intermediate group as far as amount of hostile content is concerned showed both medium and excessive amounts of overt hostility. Since the measure of overt behavior is the resultant of ratings made over a relatively long period of time, it would seem that these individuals consistently discharge some of their hostile tension in overt behavior. Consequently, it would follow that their tension index on the Rorschach would ordinarily be in an intermediate rather than a high or low range.

Those subjects who had extremely high Rorschach hostile content scores expressed relatively little overt hostility in the classroom. It would appear that these subjects were unable to utilize behavioral channels for the discharge of hostile tension — overt hostility may have been too anxiety-provoking—and hence the hostile tension built up to high levels as revealed in the Rorschach hostile content scores.

Those subjects evidencing low hostile content scores could theoretically have been subjects who discharged hostile tension immediately and regularly or who tended to be impulsive and to show little evidence of hostility arousal in their everyday behavior. Since these subjects revealed little or no overt hostility in the classroom, it would appear that they were relatively impulsive persons characterized by a very low level of hostile tension. Consequently, low hostile content scores in the Rorschach would be expected.

Regardless of how one interprets its significance, however, the curvilinear relationship between hostile content and overt hostile behavior illustrates a significant methodological danger that accompanies the use of only two extreme criteria groups in studies attempting validation of projective tests. If only the two extreme groups had

been used in the present study, no significant relationship could have been established between hostile content scores and overt behavior since both the low and high-scoring groups displayed little overt hostility. Since two-group criteria measures cannot detect the non-linear type of relationship established in the present investigation, it would seem that studies of projective test measures would do well to use either the full range or several groups representative of the range of criteria variables.

Hypothesis 2, which predicted a positive, linear relationship between hostile content on the MAPS and overt hostility is supported by one aspect of the MAPS hostile content. The Hostility Control Score (HCS) on the MAPS was very significantly associated with the rating for Physical Hostility. It may be remembered that this score measures the extent to which a subject acts out his thematic hostility without modifying it. This significant relationship, then, would appear to substantiate the assumption that the stimuli provided by thematic materials are in close correspondence with real life stimuli and that the tendency to respond to these stimuli with unmodified hostility is characteristic of those individuals who respond similarly under real life provocation.

Although the present study showed no significant relationship between the MAPS Hostility Score (MHS) and the behavior ratings, nevertheless this score assumes statistical importance in that it affects the reliability of the HCS which does show a significant relationship.

Hypothesis 3 is also confirmed since each of the test measures — Rorschach and MAPS — contributed equally to a multiple correlation larger than that obtained from the use of either test alone. The findings thus provide confirmation of the general clinical practice of basing hostility evaluations on both the Rorschach and a thematic test.

This study confirms the validity of these hypotheses for the childhood age level. However, it may be noted that the degree to which these findings can be held true for all children of this age group is limited by a lack of knowledge concerning the degree to which these children were a representative sample. The selective effect of their reading disability is not definitely known. The fact that the group showed a normal distribution, both in intelligence and amount of overt hostility displayed, suggests that they do not differ markedly from their peers in these attributes. Because of their reading disability they may have more emotional conflicts and somewhat higher average hostility as a group, but there is no evidence that they typically handle their hostility in ways that are different from other children.

SUMMARY

This study investigated the nature of the relationship between overt hostility displayed by children in their schoolroom behavior and the hostile content of their Rorschach and MAPS protocols. It was hypothesized that:

1. The hostile content of the Rorschach would show a curvilinear relationship to overt hostility.
2. The hostile content of the MAPS would show a positive, linear relationship to overt hostility.
3. The prediction of overt hostility could be more accurately made from the hostile content of both the Rorschach and MAPS Tests than from either test alone.

The Rorschach and MAPS tests were administered to thirty white males between nine and fifteen years of age. The Rorschach protocols were then scored for the amount of hostility in the content. The MAPS protocols were scored for: (1) the amount of hostility produced, (2) the amount of hostility produced and the degree of its modification, and (3) the degree to which hostile content was acted out in the stories without modification.

Each subject was also rated by his teachers on the degree of physical hostility, verbal hostility, and quarrelsomeness which he generally displayed in the classroom.

The test and behavior measure of hostility were subjected to a statistical analysis which revealed the following relationships between them:

1. There was a low but statistically significant correlation between the hostile content in the Rorschach and overt hostility. This relationship was essentially curvilinear with high and low amounts of hostility being associated with low overt hostility and mid-range amounts of hostile content being associated with high overt hostility.

2. A positive and statistically significant relationship was found between the degree to which hostile themes were acted out without modification in the MAPS protocols and overt hostility.

3. A combination of the hostile content scores in the Rorschach and the MAPS scores based on the acting-out of hostile themes without modification produced a multiple correlation coefficient that was higher than the corresponding evaluation of either one with overt hostility ratings.

4. The different relationships found between the MAPS and Rorschach hostile content and overt hostility indicated that the two tests were measuring different aspects of this personality dimension.

5. None of the correlations between the hostile projective test content and overt hostility were high enough to make these measures useful as predictive instruments on an individual level.

The findings of the present study support the validity of each of the hypotheses evaluated.

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Rorschach Form-Level, Intellectual Functioning and Potential¹

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Evaluation of intellectual functioning has been a routine part of Rorschach interpretation ever since the inception of the test, yet research aimed at "validating" such intellectual estimates has met with only variable success. The present paper reviews these studies and reports on a study in which the previously untested technique of form-level rating is used to make estimates of both intellectual functioning and potential.

REVIEW

Hermann Rorschach postulated seven characteristics to be found in the protocols of intelligent subjects, on the basis of his study of 120 such individuals, (17, pp. 56-66). These included, in brief, an optimum F+ % (80 to 95), many M, high W%, orderly sequence both within each card and throughout the test, low A% and optimum original responses. These characteristics refer to the psychological functions of clarity of perception and association (F+ %), capacity for "inner creation" (many M), ability and energy for thought and organization (high W%), orderliness and control of thinking (sequence), flexibility rather than stereotypy (low A%) and optimum originality within the framework of good reality-contact (originals). Rorschach felt that productivity, in terms of the number of responses, was not relevant in intellectual evaluation, although some researchers have found it to be so. The available studies will be summarized below in terms of the factors posited by Rorschach, with the addition of studies in which the number of responses and the Z score of Beck (2) are used.

Number of Responses (R)

Wishner (24), reports correlations significant at the 1% level or better between R and Wechsler-Bellevue scores on Verbal I.Q. (.80), Information (.75), Similarities (.53) and Vocabulary (.61). Spaner (19) finds a correlation significant at the 1% level between R and Information (.22, using epsilon square), but with no other W-B scores. Holzberg's (5) only significant correlation (at the 5% level) was between R and Information (.27). Smith (18), on the other hand, found near-significant correlations (.07 level) only between R and Comprehension (.46) and Similarities (.49). His remaining correlations were insignificant (with Full Scale I.Q. .21, with Verbal I.Q. .17, with Performance I.Q. -.11). Other researchers also report insignificant results (21). It would thus seem that R or productivity might be related to Verbal intelligence, particularly to Information, Comprehension, Similarities and Vocabulary may also play a role. The differing results might be accounted for by the fact that highly intelligent subjects sometimes produce only one very good response per card, as Rorschach pointed out (17, p. 21). Thus the correlations would be non-linear.

Human Movement (M)

Low, but consistently positive correlations of about .25 are found between M and the Full-Scale W-B I.Q. Tucker (22), Hertz (4), and Smith (18) reported correlations of .26, .25 and .20, respectively. Again, the correlation seems to be related only to Verbal Intelligence, with Information and Similarities providing the heaviest weighting. Smith's correlations are .21 with Verbal I.Q., .15 with Information, .05 with Comprehension, .23 with Similarities, .11 with Vocabulary

¹ The data for this study were gathered while the author was on the clinical psychology staff at Fitzsimons Army Hospital, Denver, Colorado.

and .15 with Performance I.Q. Tucker found a significant correlation with Information (.33) and Wishner an insignificant one with Picture Arrangement. Lotsof (14) found a correlation of .20 between M and the Ohio State Test of Intelligence.

Number and Percentage of Whole Responses (#W and W%)

Beck's pioneering study (1) showed a .47 correlation between W% and Binet Mental Age for a feeble-minded group. Holzberg found a negative correlation (— .32) between W% and Similarities. Taulbee (21) reported a positive and significant correlation (5% level) between the number of W and Full-Scale W-B I.Q. Wishner (24) found a correlation of .74 between number of W and Vocabulary (significant at 1% level), but a negative correlation with Comprehension (— .40). These findings are a little perplexing in their implications. Smith (18) suggests that W is related to W-B scores in a U-shape curve, that is, those who produce few and many W's are the most intelligent. Rorschach, of course, felt that W-production was related to the "availability of associations" and the availability of "energy of associative activity" (17, pp. 65, 66). A major difficulty frequently pointed out (notably in "Methodological Research Problems" in 12), is that such "scores" as W "merely indicate the fact that the subject was trying to use all the blot material on any given card. . . Obviously, any attempt to attach more meaning than that to a W% would be a premature." It is pointed out that a high W% might be produced by a subject with a cortical lesion which reduced his intellectual flexibility, by a gifted person with a rich imagination, by a person with mediocre intelligence who does not know the limits of his reasoning power, by children, by people with undifferentiated perception, etc. What, perhaps, is related to intelligence is the degree of complexity, differentiation and or-

ganization found in the W responses. This information is not provided by either the W% or the number of W, in the absence of knowledge of the type and quality of the W responses.

Proportion of Responses with "good form" (F+%)

Hertz (4) reported correlations between intelligence and F+% which vary between .33 and .64, the latter figure coming from Beck's work (1), but a more recent study found a correlation of only .08 (24). Holzberg (5) found a significant correlation of F+ with Similarities only (.36) and Spaner (19) a significant correlation only with Comprehension (epsilon square of .24). Taulbee, on the other hand (21), found no significant relationships at all. In the opinion of the author, the use of F+%, as now measured, results in difficulties similar to that found in the use of W% (20). F+ is scored for both popular level responses and superior ones, which vitiates its use as an intellectual measure. It is more likely to give information about the state of the subject's reality-testing. The positive results obtained would suggest that perhaps Rorschach's hypothesis about the "clarity of perception and association" may have some merit, but that F+% alone is not likely to measure intellectual functioning.

Proportion of Animal Responses (A%)

Rorschach believed that a high proportion of animal responses was indicative of stereotypy and negatively related to intelligence. This is borne out by Beck (1), who found a correlation of — .41 between A% and mental age. Other researchers have reported both negative (19) and positive (18) correlations of A% with Object Assembly, but with no other sub-tests. Rorschach's hypothesis seems to have received insufficient testing, though most workers would agree with his statement.

Beck's Z

Beck empirically established an "organization" or Z score which he postulated as closely related to intellectual functioning (2). Taulbee (21) obtained a significant correlation of Z with Full Scale W-B I.Q. and Wishner (24) found highly significant correlations with W-B I.Q. (.54), Verbal I.Q. (.42), Information (.36) and Vocabulary (.60). These studies suggest that Z is a measure of Verbal Intelligence, related primarily to Information and Vocabulary.

Content Categories and Original Responses

Only two studies report correlations between these two factors and psychometric measures. Spaner (19), using epsilon square, found a significant correlation between W-B Full Scale I.Q. and number of content categories and Smith (18) found the number of originals provided the highest of his correlations with I.Q., though it was low (.22). There is a suggestion here that flexibility (variety of content categories) and originality, do relate to I.Q., but the relationship has been insufficiently assessed.

Other Measures and Results

Studies done abroad, (6, 13, 16, available only in abstract form), report both significant and non-significant correlations between various Rorschach measures and psychometric devices, and reflect the same concern with the adequacy of quantification. Factor analytic studies of the Rorschach (23, 14) have suggested the presence of an "intelligence factor." In two researches, (21, 3), quantification and correlation were essentially not significant, but clinicians using a more "global" approach were able to predict I.Q., although there were marked individual differences in the accuracy of their predictions.

Discussion

No clear-cut conclusions can be

drawn from the results of the above-mentioned studies. Although all of Rorschach's factors have shown significant correlations with psychometric I.Q. measures in some researches, in others all have failed to do so. This is also true for the factors of R and Z. Where significant correlations are found, they are exclusively with Verbal Intelligence and, in the W-B, with the subtests of Information, Similarities, Vocabulary, and Comprehension. We have seen that individual clinicians, using a "global" approach, are able to predict I.Q. scores from their assessment of the Rorschach. The lack of adequate correlations may indicate that the factors are inadequate, not that no relationship exists. R, Number of W, W%, and F+%, each involve several sub-factors which, when used in gross fashion, tend to cloud the issue (20). Beck's Z seems to show promise, but it measures only one of Rorschach's group of characteristics of intelligence, namely organization. A%, Number of Content Categories, and Original responses, seem to be related to two other factors of flexibility and originality, but are limited as quantified measures. M, which is related to "inner creation"—perhaps measures only one aspect or one kind of intelligence.

It should be noted that Rorschach studied the common characteristics of records of intelligent subjects. Later studies, however, have implicitly assumed that his factors were continuous—the higher the intelligence, the more the factors would be present. Research suggests that the latter assumption may be correct, but this has not been clearly demonstrated. Perhaps other factors which characterize unintelligent subjects should be introduced.

An important defect of the factors is that none of them are "scores." Ainsworth and Klopfer (11, p. 19) have pointed out that, "In the Rorschach technique scoring is a process of classification. Responses that are

similar with respect to some significant characteristics are classified together and assigned the same scoring symbol. . . The only score that is directly quantitative is form-level rating." This point was later re-emphasized and expanded ("Methodological Research Problems" in 12). Statistical errors result from the comparison, by correlation, between a true set of "scores," as in the Wechsler-Bellevue, with Rorschach "scores" where the latter have a different semantic meaning.

One is left with the impression that there may well be a relationship between psychometric intellectual measures and Rorschach factors, but the degree and type of relationship has not been precisely determined. The Rorschach, for example, may assess different aspects of intellectual functioning than those revealed by psychometric devices.

The variable of *potential* intelligence, in particular, is commonly examined in Rorschach testing, but only rarely so in I.Q. tests. Evaluation of a subject's intellectual capacity, under optimum conditions, as well as evaluation of his current intellectual functioning is stressed by Klopfer (9, 11), yet there have been no studies to assess the validity of such estimates.

What appears to be needed is an objective method of appraising intellectual functioning in the Rorschach which can include several of Rorschach's factors, can be quantifiable in the sense that I.Q. tests are, and can be used to study such variables as potential intelligence. The form-level rating seems to be such a method.

FORM-LEVEL AND POTENTIAL INTELLIGENCE

In 1944, Klopfer and Davidson published a method of "objectifying one area of Rorschach interpretation—namely, the area of intellectual functioning as expressed in the form-level." (9, 10). This method is essentially a scaling device which was "in-

tended to supplement the usual psychometric procedures which, by themselves, give a more precise estimate of the intellectual efficiency level." The method involves the quantitative evaluation of each response in a record on certain form-qualities, namely accuracy, specification, and organization. Klopfer and Davidson noted that earlier attempts at evaluation of form-quality (e.g., Beck's Z, Hertz's "g") were either too gross or assessed only one of the three factors thought to be important. The scale ranges from -2.0 to $+5.0$, with intervals of 0.5 . The method allows for additions and subtractions for accuracy, specifications and organization.

Investigation found that the assessment of form-level was, perhaps, not as objective as was first imagined (7, 8), since the reliability of agreement was not adequate. Methodological difficulties were found in the reliability investigation, however. The Rorschachs used were found to be incompletely administered and had, as Klopfer called them, "empty shells of responses." Subsequent elaboration and refinement of the form-level rating (11) has not been re-examined from the point of view of reliability.

Form-level assessment, if reliable, may constitute the desired objective method of appraising intellectual functioning in the Rorschach, but no research has yet been undertaken in this regard. The method is quantifiable, in the sense that I.Q. tests are, it includes several of Rorschach's factors, and permits assessment of such variables as potential intelligence.

It is hypothesized (11) that the average form-level of a record provides a measure of intellectual efficiency which is related to I.Q. and that the response having the highest form-level in a record, provides an index of intellectual potential.

Evaluation of potential intelligence by means of the Rorschach has had, until recently, no satisfactory counterpart in psychometric testing. Various methods of weighting Wechsler-

Bellevue sub-test scores have been attempted, using the highest sub-test score as an index, for example, but theoretical and methodological problems have made these methods unsatisfactory (15). Mahrer (15), working within the context of Rotter's social learning theory, has applied the concept of behavior potential to Wechsler-Bellevue administration and has derived a means of measuring potential intelligence. This method involves the repeated questioning of subjects on the Wechsler-Bellevue, using the largest number of correct answers as an indication of intellectual potential. The Mahrer method and the routine method of administration of the Wechsler-Bellevue were applied to subjects used in the present study.

RESEARCH

Hypotheses

The present study investigates the relationship between intellectual evaluation by means of Rorschach form-level assessment and psychometric I.Q. assessment as given in the Wechsler-Bellevue Intelligence Scale (Verbal Scale). The major hypotheses are as follows:

1. A high positive correlation will obtain between the average form-level in subjects' Rorschach records and Wechsler-Bellevue Verbal Scale I.Q. Scores.
2. A high positive correlation will obtain between the response with the highest form-level in subjects' Rorschach records and the highest Wechsler-Bellevue Verbal Scale I.Q. scores as measured by the Mahrer method.

Some additional relationships are examined. These are the correlations between various W-B sub-tests and form-level, the relative correlation of human movement responses (M) and the number of responses (R) with W-B scores.

Method

The subjects of this investigation

included 120 consecutive patients referred for psychological testing to the Clinical Psychology Section of Fitzsimons Army Hospital, exclusive of military prisoners, children, and cases requiring immediate evaluation for dispositional purposes. The mean age of the subjects was 26 years (with a SD of 8 years). There were 106 male and 14 female patients. All referrals were made by the psychiatric and medical staff of the hospital without awareness of the nature of the research project. One hundred and twelve subjects were military personnel and 8 were dependents of military personnel. Fourteen were out-patients and 106 were in-patients. The discharge diagnoses of the patients were grouped as follows: No disease (N = 6), Neuroses (N = 18), Character Disorders (N = 27), Schizophrenia (N = 27), Other Psychoses (N = 10), Schizoid and Paranoid Personality (N = 18), Organic Brain disease or damage (N = 14).

All 120 patients were administered a Rorschach (by the author) and a standard Wechsler-Bellevue (by Mahrer) including the Verbal sub-tests of Information, Comprehension, Arithmetic, Similarities and Vocabulary. Digit Span was omitted for reasons which are inherent in the Mahrer method, discussed in (15). The Verbal sub-tests included have been employed in studies cited earlier in this paper.

The order of administration of the Rorschach and Wechsler-Bellevue was randomized and neither examiner knew the scoring results on the other test until the scores had been recorded. Sixty patients were given a second Wechsler-Bellevue, using the Mahrer method to assess potential I.Q., while the remaining sixty were given a standard readministration of the W-B and served as controls. Patients were selected for experimental or control groups on the basis of initial I.Q., so the two groups had equivalent average intelligence and standard deviations. The Rorschachs were scored for form-level by the author and the

TABLE I. Correlations Between Rorschach and Wechsler-Bellevue Measures of Functioning Intelligence

N = 120

Rorschach	Wechsler-Bellevue					
	Verbal I.Q.	Information	Comprehension	Arithmetic	Similarities	Vocabulary
Average Form-Level.....	.55	.29	.46	.00	.00	.57
Number of Responses (R).....	.32	.30	.37	.13	.20	.42
Number of Human Movement (M)....	.30	.24	.30	.18	.24	.03

Note: For 119 df, 5% level of significance requires .176, 1% level requires .234.

Wechsler-Bellevues were scored by Mahrer.

Reliability

Twelve records, with a total of 223 responses, were randomly drawn from the group of 120 Rorschach records, and independently scored for form-level rating by Bruno Klopfer.² A comparison of the scoring showed perfect agreement on 86% of the responses. Of the 14% in which disagreement occurred, 81% involved discrepancies of 0.5 and 19% of 1.00. It may be concluded that form-level rating is a reasonably objective and reliable procedure.

Reliability of Mahrer's Wechsler-Bellevue scoring was based upon records drawn randomly from his experimental and control groups, three for each. These records were independently scored by seven judges. Over-all reliability of agreement was .99.

Results

The results with regard to average form-level, number of responses and number of human movement responses are given in Table I. It is seen that all three Rorschach measures correlate with Wechsler-Bellevue Verbal I.Q. at the 1% level of significance or beyond. The correlation of .55 between average form-level and Verbal I.Q. is significantly larger (6% level) than for either R (.32) or M (.30) with I.Q. An examination of the sub-test correlations reveals that average form-level correlates highest

with Vocabulary (.57), yet significantly with Comprehension (.46) and Information (.29), but insignificantly with Arithmetic and Similarities (both 0.00). R shows similar, though smaller, correlations with the subtests with the exception of Similarities, with which it correlates .20 (5% level). M, on the other hand, shows a rather different distribution, correlating at the 1% level with Comprehension (.30), Similarities (.24) and Information (.24), at the 5% level with Arithmetic (.18), and insignificantly (.03) with Vocabulary. The correlation between M and both Similarities and Information is consistent with previous research, but the low correlation with Vocabulary was unexpected.

The results tend to confirm hypothesis 1: a high positive correlation obtains between the average form-level in subjects' Rorschach records and Wechsler-Bellevue (Verbal Scale) I.Q. scores. The correlation of .55, though highly significant, seems to be insufficiently high for accurate individual prediction. Klopfer and Ainsworth, however, suggest using a group of factors in assessing intellectual functioning, including average form-level, number and quality of M, and the number of responses, among others. In the present study, correlations between average form-level and R was found to be .37, with M, .54. R correlated at .31 with M. A multiple correlation of the three Rorschach factors with Verbal I.Q. (Doolittle method) yielded a coefficient of .65. This would suggest that the Klopfer method of individual intellectual assessment by using a vari-

² Thanks are extended to Dr. Bruno Klopfer for kindly giving his time for this rating.

ety of factors may be quite tenable. This, of course, is what Rorschach originally proposed. Form-level, however, appears to be the best single measure in this regard and the most feasible. Since half of the subjects failed to produce any M, linearity cannot be assumed and the use of the Pearson r is questionable. M is an essentially qualitative factor to be used in the manner that original responses are used in assessing intelligence.

The efficacy of the average form-level in predicting I.Q. was further investigated by dividing the subjects into three groups, 40 each, on the basis of the lower third (I.Q. 64-91), middle third (I.Q. 92-107), and upper third (I.Q. 107-138). The resultant correlations between average-form level and I.Q. were .29 for the lower third, .34 for the middle third, and .40 for the upper group. It would appear that the predictive value of the form-level scoring improves as I.Q. increases.

When the group is similarly divided into thirds on the basis of I.Q. and the groups are correlated with the number of responses, the results are 0.00 for both the lower and middle thirds and .19 for the upper third. When M is used, the results are .07 for the lower third, 0.00 for the middle third, and .18 for the upper third. Apparently neither M nor R can be effectively used for even gross individual prediction by themselves.

With regard to hypothesis 2; a high positive correlation will obtain between the response with the highest form-level in subjects' Rorschach records and the highest Wechsler-Bellevue (Verbal Scale) I.Q. scores, as measured by the Mahrer method. The obtained correlation was .52, significant beyond the 1% level. The correlations of high-form-level with the various subtests were as follows: with Information .57, with Comprehension .56, with Arithmetic .45, with Similarities .65, and with Vocabulary .56. Arithmetic shows the smallest

correlation, but it, too, is statistically significant. The sub-test correlations are relatively unvaried, however, and it would seem that potential intelligence as measured by the Mahrer method has a good deal of similarity to potential intelligence as measured by Rorschach high form-level.

Discussion

The results of this study, with regard to the role of form-level in the assessment of intellectual functioning and potential, suggest certain modifications of the form-level rating scale. It was found that the average form-level was much less effective in predicting I.Q. scores among I.Q.'s below 100 than it was with I.Q.'s above 100. Frequently, subjects with below average intelligence could barely meet the requirements of the popular-level 1.00 response throughout their records. The undifferentiated 0.5 and 0.0 type of response was not as frequent in such records as might be expected. Improved predictive value might be accomplished by modifying the scale for values below 1.00, so that it is more sensitive in the lower ranges. It was noted that the average form-level ratings correlated at 0.00 with both Arithmetic and Similarities sub-tests. It is the impression of the author that the abstractive function measured by these subtests is insufficiently weighted in the form-level rating. Additional credit or finer differentiation of the "organization" value of .5 could conceivably raise the correlation.

Of some promise is the comparison between the Mahrer method for assessing potential intelligence on the Wechsler-Bellevue and the usual Rorschach form-level method. Better validating criteria for both might be provided by a predictive study in which some intervening events (e.g., psychotherapy) might produce an increase in I.Q.

The practical use of form-level in I.Q. assessment, however, is of less importance, in the author's opinion,

than its use in objectifying commonly used clinical concepts. Klopfer³ defines form-level as indicating "the combined result of reality-testing and active mastery of reality. The general fit of stimulus material and concept indicates more the former; degree and control of specification and organization indicates more the latter." Klopfer hypothesizes, and this research supports, that functioning and potential intelligence are related to average and high form-level, respectively. The relationships between intelligence, reality-testing, and mastery, however, need to be explored.

SUMMARY

This paper reviewed the literature on the assessment of intelligence in Rorschach interpretation as compared with I.Q. testing. A study of the previously unevaluated technique of form-level rating in such interpretation was reported. One hundred and twenty neuro-psychiatric subjects were given a standard Wechsler-Bellevue (Verbal Scale) and a Rorschach. A correlation of .55, significant beyond the 1% level, between average form-level and I.Q. was found, which was significantly higher (6% level) than the correlations between the number of responses and I.Q. (r is .32) and the number of human movement responses and I.Q. (r is .30). A comparison of these three Rorschach measures and Wechsler-Bellevue subtests was also performed. The correlation between average form-level and intelligence was seen to increase with increase in I.Q. The lower correlation among lower I.Q.'s was thought to be a result of the lack of refinement of the rating scale in the lower values. Potential intelligence, as measured by high form-level on the Rorschach, correlated at .52 (1% level) with potential intelligence as measured by the Mahrer method on the Wechsler-Bellevue.

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Reliability of Responses to Pictures of Peers^{1,2}

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The meaningfulness of subjects' responses to photographs of human faces has been explored by Beier (1), Izard (2) and others. The present study examines various aspects of the reliability of such responses. Positive results should encourage further use of the medium under consideration as a tool for studying interpersonal responses.

PROCEDURE

One hundred and ten naval aviation cadets were presented 157 pictures of faces of randomly selected cadets. These were presented on slides and projected on a large screen. To our knowledge, none of the subjects was known to the experimental group. To each picture the cadet was asked to mark on a four choice multiple-choice form whether "(a) he was very favorably impressed by the picture, (b) he was mildly favorable to the picture, (c) he received slightly unfavorable impression from the picture; or (d) the picture made a very unfavorable impression."

One week later the subjects were asked to rerate the same set of pictures.

The "favorableness" of response of an individual to the 157 faces presented him was obtained by summing the total number of responses that each subject gave in the categories "very favorably impressed" and "mild-

ly favorable" and subtracting from these the total number of unfavorable responses (the items marked "slightly unfavorable" and the items marked "very unfavorable"). Thus, if a person responded favorably to 100 pictures and unfavorably to 57 pictures his score would be 43.

The "intensity" of response of a given subject was obtained by summing the two extreme responses which could be made to each item, i.e., the categories "very favorably impressed" and "very unfavorable" and subtracting from these responses the less intense response categories, i.e., those items marked "mildly favorable" and those marked "slightly unfavorable." By such a method, if a person responded to more than half the responses using the extreme categories he would have a plus score and if he responded more frequently in the two middle categories he would have a minus score.

RESULTS

We were first concerned with the question of the stability of favorable or unfavorable reaction tendencies toward faces of peers, both within a given session and between sessions. By using an odd-even split-half procedure (corrected by the Spearman-Brown formula), it was found that the within session reliability was .92 for the favorability score. The between session reliability was obtained by simply correlating the favorableness scores obtained for the two sessions; this reliability was .56. It would appear then that individuals react with a considerable consistency of response over a series of 157 randomly selected faces within a given session. In other words if a person responds highly favorably

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² The authors wish to offer their thanks to Edward J. Wallon for his aid in statistical computations.

³ Now with General Electric Company.

to a set of faces he is also very likely to respond favorably to another set of faces. There is still considerable stability of this tendency a week later, although there has been a considerable drop in consistency.

A similar stability was noted in regard to the intensity of an individual's reaction to faces. Using the intensity score, the within session reliability obtained by an odd-even procedure was .93 and the between session reliability was .72. Again, if a person responds with extreme responses to one set of pictures he is likely to respond with similar "extremeness" to another set.

It was noted that generally individuals respond favorably to faces of their peer group. The mean number of favorable responses given in the first session was 110.68 and the mean number of unfavorable responses was 46.31. This would indicate that a normal group of subjects, when forced to respond, respond favorably to about 2 out of every 3 faces of their peers. It was found that on the first test the average number of "mild reactions" was 99.5 and the average number of "extremely" favorable or unfavorable reactions was 57.4. This would indicate that in general one's reaction to the face of others is described as mild in somewhat more than 2 times out of every 3.

In addition to the findings noted above, perhaps one of the most striking findings was evidence of a stereotyping of responses on the part of the total group toward faces presented them. The papers were divided into two randomly selected groups. The rank order of the "favorableness" of the pictures was obtained by totaling up the number of favorable responses that each picture received for the total group and ranking the pictures on the basis of the favorable responses received by each face. The correlation between the rank orders for the two halves of our subjects was .92, which reveals a rather startling "stereotyping" of responses to pictures of peers. In a sense, this means that if a picture

is viewed unfavorably by half of a population, it is almost certainly to be viewed with similar unfavorableness by a second half of the population. One receives the impression then, that there is "built" into the group a relatively stable and universal initial reaction tendency to the faces of peers.

A final point of interest was explored. The relationship between the intensity of response and the favorability of response was noted. Each individual could be scored on the favorableness of their responses to the pictures and could also be scored as to the extent to which they used the extreme or the middle categories in such responses. These two scores were correlated for our group. The correlation was found to be $-.28$. This would indicate that the more extreme the rating the less favorable the rating was.

SUMMARY AND CONCLUSIONS

A group of 110 naval cadets were presented pictures of 157 other cadets with whom they were not personally acquainted. They were asked to record whether each picture impressed them very favorably, mildly favorably, mildly unfavorably, or very unfavorably. We have then a group of young men (ages 18 to 25) responding to the pictures of their peers in age, interest, and general background.

The consistencies of response in this situation were marked. Within sessions the responses of a subject on half the pictures were highly predictive of his responses to a completely different group of pictures. With a week between sessions, responses of a subject during one period were highly predictive of his responses at a later period. This high consistency was true of both the degree of favorableness expressed toward the group of pictures and the intensity with which these responses were expressed.

Perhaps the most striking consistency was noted in the way the group as a whole responded to a given picture. Some faces were almost univer-

sally responded to favorably, others unfavorably. If, for example, we ranked the pictures by the number of persons responding to each picture favorably on the basis of the responses of half the raters, the ranking was highly correlated with such a ranking based on the other half of the raters.

Let us recall that the faces of others as a stimuli are a complex cumulated history of social and interpersonal experiences. Few stimuli are as discretely associated with socially mediated rewards and punishments as the human face. These facts plus the experi-

mental reliability of this response demonstrated in this paper should enhance the consideration of this response as an experimental variable.

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Sexual Connotation of the Name Blacky

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In his manual for the Blacky Pictures, Blum (1, p. 3) states: "The names Blacky and Tippy were selected by means of an informal survey in which a list of eight dog names was shown to a small group of males and to a small group of females. All the persons were asked to record whether they felt that each name suggested the male sex or the female sex. Generally the male judges felt "Blacky" to be male, whereas the female judges regarded it as female. "Tippy" ... has his (her) sex described equally often as male or female by both male and female judges." If "Blacky" is not a sexually neutral name, the question arises as to the comparable degree of identification afforded by the stimulus word to either sex.

To test the hypothesis of the sexual neutrality of the dog name "Blacky" 169 subjects were individually asked to indicate the sex for each of eight dog names, including "Blacky" and "Tippy," presented on cards in random order.¹ The subjects were 38 normal males, 60 normal females, 34 male psychiatric patients, and 37 female psychiatric patients. All were white and between 18 and 60.

in that both male groups overwhelmingly classified "Blacky" as male. This is significant at the .01 level. However, contrary to Blum, both female groups also reflect the same significant degree of male connotation for "Blacky." The name "Tippy" was found to be sexually neutral in connotation for all groups except female patients. This group classified "Tippy" as primarily male, a preference significant at the .05 level.

It would seem from the data that the dog name "Blacky" does not, of itself, present a sexually flexible stimulus but is predominantly male in connotation. How much this factor is operative in the actual clinical situation remains to be explored.

SUMMARY

In this study it was shown that the dog name "Blacky" by itself, was not sexually neutral as Blum implied but that "Blacky" was predominantly male in connotation irrespective of the sex of the rater. This held for psychiatric patients as well as normals. No attempt was made to see how much of a factor this was in the actual utilization of the Blacky Pictures.

TABLE I—Sexual Classification of Blacky and Tippy by Groups

Group	Blacky		Tippy	
	Male	Female	Male	Female
Normal Male.....	30	8	18	20
Normal Female.....	50	10	29	31
Patient Male.....	26	8	15	19
Patient Female.....	31	6	25	12

The data in Table I supports Blum's findings with respect to males

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¹ The other dog names used were: Pal, Ranger, Jinx, Spotty, Wooly, and Fluffy.

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Conception of Masculine and Feminine Roles in Paranoid Schizophrenia¹

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In a previous paper by the author (12), an attempt was made to investigate the hypothesis relating paranoid schizophrenic states to conflict over latent homoerotic drives. The results obtained by the study led to a formulation relating the homosexual position to the adaptive functions implicit in the various stages of psychosexual identification. To summarize briefly, the results suggested: a) that the paranoid schizophrenic group studied revealed more marked tendencies toward feminine psychosexual identification than either the control schizophrenic group, consisting of catatonic and hebephrenic individuals, or the control normal group; b) that the non-paranoid schizophrenic group tended toward greater feminine identification than the normal group; c) that the non-paranoid schizophrenic group revealed greater confusion in psychosexual identification than either the paranoid group or normal group; d) that the paranoid group tended toward greater psychosexual confusion than the normal group.

In attempting to integrate these results, it was suggested that the homoerotic position may represent efforts on the part of the conflicted individual to resolve the confused psychosexual identification which is so devastating to the ego and represents a more regressed level of stabilization than does a homosexual resolution via feminine identification. This may in part account for the clinical observation that the paranoid schizo-

phrenic is generally more stable, and his ego functions more intact, than catatonic and hebephrenic schizophrenics. It was further suggested that elements of confused identification and identification with the opposite sex may occur in all individuals. The nature of the final adjustment depends upon the patterns that emerge in the ego's process of establishing and maintaining a state of relative equilibrium.

Dependent upon the developmental aspects of identification generally, and psychosexual identification in particular, is the issue of concept of social role. If identification represents an important facet of the substratum of character structure, then the social role constitutes a major aspect of the resultant expression of the basic character structure of the individual. In effect, the social role of the individual is an important index of the adaptive value of his identifications. Cameron (3, p. 90) stated, "... a person's role-taking habits are of very great significance because defects, distortions and exaggerations in their operation can give rise to all kinds of damaging behavior pathology, especially in adolescent and adult life."

A number of investigators, in their studies of the prepsychotic personality of the individual in terms of the subsequent reaction that develops, referred to variables clearly related to social role. Blalock (1) reported passivity, submissiveness, and general lack of sexual adaptability as premorbid characteristics of catatonic schizophrenics. Sadler (10) cited feelings of inadequacy, suspiciousness and jealousy, inordinate ambition, prudishness, vanity, impracticality, and self-seeking as characteristics of indi-

¹ This is the second article based upon a dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the School of Education of New York University.

viduals who tend to develop paranoid reactions.

A question that would seem logically to follow the conclusions concerning psychosexual identification in paranoid schizophrenics, non-paranoid schizophrenics, and clinical normals is whether these groups tend also to differ in their concept of the masculine and feminine roles.

STATEMENT OF THE PROBLEM

Given the understanding of the relationship between psychosexual identification and psychopathology, some ambiguity still remains. What differences should be expected between an individual with predominantly feminine identification whose concept of the feminine role is cast in terms of an aggressive, assertive, domineering figure and an individual with feminine identification who views the female figure as passive, submissive and so forth? In this study some aspects of the differences in conception of the masculine and feminine roles among paranoid schizophrenics, non-paranoid schizophrenics, and normals will be investigated.

It is hypothesized:

1. That the paranoid and non-paranoid schizophrenic groups will differ significantly from the normal group with respect to concept of the masculine and feminine roles.

2. That the paranoid schizophrenic group will not differ significantly from the non-paranoid group with respect to concept of the masculine and feminine roles.

SUBJECTS

The data descriptive of the subjects were reported more systematically in a previous publication (12). All the subjects were veterans of World War II. The experimental group consisted of fifteen paranoid schizophrenic, hospitalized patients. The non-paranoid control group consisted of eight catatonics and seven hebephrenics. The normal controls consisted of fifteen patients post-op-

eratively hospitalized. Equivalence of the groups for age and education was established.

PROCEDURE

The Rorschach Psychodiagnostic Test and the Thematic Apperception Test were the experimental instruments used for this study.

I. Rorschach Psychodiagnostic Test. The administration of the Rorschach was described fully in the previous study (12). Briefly, the test was first administered in the manner prescribed by Klopfer and Kelley (7). Testing the Limits for Sex (9) followed. The third step consisted of Testing the Limits for Human Movement, a modification of Testing the Limits for Sex. Human movement responses, for this aspect of the study, were scored in the following manner:

1. Movement Responses in Male Figures (including Testing the Limits for Movement)

- (a.) Passive movement
- (b.) Active movement
- (c.) Aggressive movement
- (d.) Blocked movement
- (e.) Cooperative movement
- (f.) Competitive movement
- (g.) Homosexual movement
- (h.) Heterosexual movement
- (i.) Unspecified movement.

2. Movement Responses in Female Figures (including Testing the Limits for Movement).

Same as above.

The reliability for the scoring was evaluated by having a qualified clinical psychologist classify the responses independently and comparing his results with the author's scoring. Of all the proposed scoring categories, passive movement, active movement, and aggressive movement occurred with sufficient frequency to warrant use. The categories of blocked movement, cooperative movement, competitive movement, homosexual movement and heterosexual movement occurred so infrequently that where possible they were incorporated into the more frequent categories. There were

no instances where responses had to be scored unspecified.

Of a total of 281 movement responses, the scoring of the investigator and the judge concurred 275, or 97.86 per cent of the time, yielding a contingency coefficient of 0.88. For purposes of further analysis, the instances in which scoring disagreement had occurred were resolved by using a third judge. He scored the disputed items independently and the two scores out of three which concurred were accepted.

The following specific predictions were derived from the basic hypotheses with regard to the Rorschach findings:

1. The type of movement projected onto male and female figures by the paranoid and non-paranoid groups will differ from the type of movement responses given by the normal group.

2. There will be no significant difference between the type of movement responses given by the paranoid and non-paranoid groups.

II. *Thematic Apperception Test.* Thirteen cards were selected because of the variety of figures and situations depicted. These were: 1, 2, 3BM, 4, 6BM, 7BM, 8BM, 10, 12M, 13MF, 18BM, 18GF, and 20. The contents of the stories were organized for analysis in the following manner:

I. Male Attitudes Toward Males

1. Dependence-Independence Expressed
 - (a.) Dependence upon male expressed
 - (b.) Independence from male expressed
 - (c.) Conflict over dependence-independence expressed
2. Hostility-Aggression Expressed
 - (a.) Male hostile to male
 - (b.) Male aggressive to male
 - (c.) Ambivalence expressed
3. Rejection-Acceptance Expressed
 - (a.) Male rejects male
 - (b.) Male accepts male
 - (c.) Male is indifferent to male
4. Passivity-Dominance Expressed
 - (a.) Male is passive toward male
 - (b.) Male is domineering toward male

II. Male Attitudes Toward Females

5. Dependence-Independence Expressed: Same variables as I, 1.
6. Hostility-Aggression Expressed: Same variables as I, 2.
7. Rejection-Acceptance Expressed: Same variables as I, 3.
8. Passivity-Dominance Expressed: Same variables as I, 4.
9. Sexual Attitudes and Interests Expressed
 - (a.) Guilt over heterosexuality
 - (b.) Ambivalence toward heterosexuality
 - (c.) Positive attitude toward heterosexuality.

III. Female Attitudes Toward Males

10. Dependence-Independence Expressed: Same variables as I, 1.
11. Hostility-Aggression Expressed: Same variables as I, 2.
12. Rejection-Acceptance Expressed: Same variables as I, 3.
13. Passivity-Dominance Expressed: Same variables as I, 4.
14. Sexual Attitudes and Interests Expressed: Same variables as II, 9.

IV. Female Attitudes Toward Females

15. Dependence-Independence Expressed: Same variables as I, 1.
16. Hostility-Aggression Expressed: Same variables as I, 2.
17. Rejection-Acceptance Expressed: Same variables as I, 3.
18. Passivity-Dominance Expressed: Same variables as I, 4.

An independent judge was used to test the reliability of the investigator's scoring. Reliability coefficients were obtained. These are summarized in Table I.

Disagreement in scoring was resolved by use of a third judge as arbiter.

The following specific predictions were made in relation to the Thematic Apperception Test findings:

1. The behavior depicted by the paranoid and non-paranoid groups as characterizing men and women in the TAT stories will differ from the behavior described by the normal group.

2. The paranoid and non-paranoid groups will not differ significantly in their portrayal of behavior of male and female figures in the TAT stories.

TABLE I—Classification of Thematic Apperception Test Responses by Independent Scorers

	Total	Per Cent Agreement	Reliability
Dependence-Independence.....	281	97.15	0.80
Hostility-Aggression.....	464	94.18	0.79
Rejection-Acceptance.....	231	99.13	0.81
Passivity-Dominance.....	203	99.01	0.97
Homosexual Attitudes.....	64	92.18	0.83
Heterosexual Attitudes.....	266	95.11	0.80
Attitudes Toward Self.....	234	100	1.00

RESULTS²

It was predicted that the paranoid group would differ from the normal group with respect to the type of movement projected into male and female figures on the Rorschach. In the comparisons involving movement in male figures (Table II, Comparisons A, B, C), two determinations out of three were significant ($P = .05$ or better). In the comparisons involving female figures (Table II, Comparisons D, E, F), none of the three determinations were conclusively significant. One comparison (Table II, Comparison E) was suggestive ($P = .10-.20$).

The non-paranoid group for which a similar differentiation from the normal group was predicted, did not differ conclusively from the normal group in any of three comparisons involving male figures. Two determinations (Table II, Comparisons A and C) suggested trends toward differentiation ($P = .05-.10$). Of the three comparisons involving female figures, none was significant.

It was predicted that the paranoid group would not differ from the non-paranoid group. They did not differ significantly on the three comparisons involving male figures, and of the three comparisons involving female figures, only one (Table II,

Comparison E) showed a trend ($P = .10-.20$).

Similar predictions were made with regard to attitudes and behavior of male and female figures in the TAT stories of the three groups. The paranoid group differed significantly from the normal group in six out of fifteen comparisons (Table III, Comparisons A, B, C, F, J, K) involving male attitudes and behavior ($P = .05$ or better). In two determinations (Table III, Comparisons D and E) the trends were suggestive ($P = .05-.10$). With regard to female response categories, the paranoid group differed from the normal group in only two (Table IV, Comparisons A and B) of nine comparisons ($P = .05$ or better), whereas three determinations (Table IV, Comparisons D, E, H) showed trends ($P = .05-.10$).

The non-paranoid group differed from the paranoid group in nine out of fifteen comparisons (Table III, Comparisons A, B, C, F, J, K, L, M, N) involving male response categories ($P = .05$ or better), and in one out of nine (Table IV, Comparison B) female response categories ($P = .02-.05$).

The paranoid group was not differentiated from the non-paranoid group in any instances involving either male or female response categories.

INTERPRETATION AND DISCUSSION OF RESULTS

The outcome of the predictions to the Rorschach data indicates that the paranoid group does differ substantially from the normal group with respect to the type of movement pro-

² Tables referred to in this section have been deposited with the American Documentation Institute. Order Document No. 4880 from American Documentation Institute, 1719 N Street, N.W., Washington 6, D.C., remitting \$1.75 for 35 mm. microfilm or \$2.50 for 6 x 8 inch photocopies.

jected into the male figure. The results of the Rorschach are consistent with the observations of Knight (8) and Hinsie (5), who described the projection of the paranoid individual as a maneuver to rationalize his own hostility toward others. Although the paranoid group was not differentiated significantly from the normal group in the comparison of male passive movement to male aggressive movement, the paranoid group gave significantly more responses of male passive movement and male aggressive movement, in relation to male active movement, than the normal group. Passivity and aggressiveness represent two aspects of the paranoid's attempts to manage his hostility. Passivity may be viewed as an attempt to deny the aggressive impulses. Because the hostility cannot be allayed by denial, projection occurs and others are viewed as aggressive and threatening. Fenechel (4) related the ambivalent aggressive characteristics of the paranoid individual to latent homosexual impulses. This view was made more explicit by Brill (2), who regarded the paranoid reaction as a regression to an oral-anal-sadistic level. It is during this period of development, according to Brill, that the destructive components of the ego are dominant.

The non-paranoid group, as was predicted, did not differ from the paranoid group in comparisons of movement in male figures on the Rorschach. They tended to differ from the normal group, but to a lesser degree than was true for the paranoid group.

Although not all of the predictions to the Thematic Apperception Test involving the concept of masculine role were substantiated, significant differences between the paranoid and the normal group occurred. The paranoid group attributed greater guilt and ambivalence concerning heterosexual activity than the normal group. In comparison to the normal group, the paranoid group depicted the male

as more dependent upon other male and female figures.

The paranoid group pictured the male as more rejecting and indifferent to other males than did the normal group. The paranoid group also saw the male figure in conflict over dependence-independence, in relation to females, to a significantly greater extent than the normal group. Katz (6) has observed that coddling, overprotection, overdomination, and ignoring, operating in a family structure with a strong feminine influence, may act as predisposing factors in male schizophrenia. Such an atmosphere, Katz stated, contributes to difficulties in establishing independence. Whitehorn (11) found yearning for independence to be a vital factor in the schizophrenic, who characteristically has been impeded in his attempts to develop a constructive mode of life. It is evident from the Thematic Apperception Test data that the conflict over dependence-independence in relation to the female is a more potent force in the schizophrenic than is conflict in relation to the male.

It is significant that the determinations involving hostile and aggressive attitudes and behavior on the Thematic Apperception Test yielded no significant results, whereas these variables differentiated the paranoid group successfully from the normal group on the Rorschach. It seems that the latter technique, because it probes more deeply into the unconscious aspects of personality than the Thematic Apperception Test, was more sensitive to these variables. The paranoid group did not differ from the non-paranoid group in the interpretation of the male role on the Thematic Apperception Test. The non-paranoid group, however, did differ, and in similar respects as was true for the paranoid group, from the normal group in this regard.

The paranoid group did not differ from the normal group with respect to the type of movement projected

into female figures on the Rorschach. On the Thematic Apperception Test, only the comparisons involving heterosexual activity indicated that the paranoid group tended to portray females as significantly more guilty and ambivalent than did the normal group. There were minor trends toward differentiation in relation to females hostile to males and females who reject and are indifferent to males. This may indicate that the paranoid subjects permitted some of their unconscious hostility to male figures to be expressed through the female figures on the Thematic Apperception Test, rather than through male figures. It must be concluded, however, that the paranoid group did not differ significantly from the normal group in the concept of the female role.

None of the Rorschach or Thematic Apperception Test female response categories differentiated the paranoid from the non-paranoid group. The non-paranoid group did not differ from the normal group in the comparisons of female response categories on the Rorschach. On the Thematic Apperception Test, the only differentiating category was the one related to heterosexual activity.

The considerations of concept of sexual role reveal that the paranoid and the non-paranoid groups resemble each other more significantly than either of the schizophrenic groups resemble the normal group, but only with respect to the concept of the masculine role. The groups are not differentiated significantly with regard to the concept of the feminine role. A possible explanation for these results resides in the fact that an appreciation of the feminine role is not as vital to the adjustment of the male individual as is an understanding of the masculine role. The demands made upon the male individual by society may be stated in general terms: he is expected to be sufficiently like other males in his behavior so that his deviations are not

conspicuous. This requires a mastering of the knowledge of what it constitutes to be a male. Serious defects in an individual's concept of the male role may be expected to be reflected in difficulties in adjustment and, ultimately, in psychopathological reactions. Knowledge of the feminine role is achieved, for the most part, in a more indirect fashion by the man. It is not incumbent upon him to master the feminine role so that he can be a successful woman by the precepts of his social milieu.

SUMMARY

This study compared a group of fifteen paranoid schizophrenics with a group of fifteen non-paranoid schizophrenics and a group of fifteen normals with respect to conception of the masculine and feminine roles. It was hypothesized that the paranoid and non-paranoid groups would differ significantly from the normal group with respect to concept of masculine and feminine roles, whereas the two schizophrenic groups would not differ in this respect. The Rorschach and selected cards of the Thematic Apperception Test were used.

The results indicated that the paranoid group differed from the normal group in two out of three chi square determinations involving Rorschach male response categories ($P = .05$ or better), none out of three determinations involving female Rorschach response categories, six out of fifteen chi square determinations involving male Thematic Apperception Test response categories, and two out of nine determinations involving female Thematic Apperception Test response categories.

The paranoid group was *not* differentiated significantly from the non-paranoid group in any of the comparisons.

The non-paranoid group showed trends toward differing from the normal group in two out of three determinations involving male Rorschach response categories ($P = .05-.10$), and

did not differ in any of the three determinations involving female Rorschach response categories. They differed significantly from the normal group in nine out of fifteen determinations involving male Thematic Apperception Test response categories and in only one out of nine determinations involving female Thematic Apperception Test response categories.

It was concluded that the two schizophrenic groups differed from the normal group in their interpretation of the masculine role, but did not differ in their concept of the feminine role. Also, the paranoid group did not differ from the non-paranoid group with respect to the concept of the masculine and feminine roles. Some theoretical implications were discussed.

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BOOK REVIEWS

Fingermann, Gregorio. *Fundamentos de Psicotecnica.* Buenos Aires: El Ateneo, 1954. Pp. 346.

Although the content of this book is not strictly appropriate for review in the *Journal of Projective Techniques*, this reviewer feels that in the interest of international professional communication a brief review could be of some service. The author is director of the Instituto de Orientacion Profesional del Museo Social Argentino (Institute of Vocational Guidance) and has published books in esthetics, education, philosophy, logic and psychology. His scope of interest appears to lie in the European tradition still extant in some American colleges in which education, philosophy and psychology are not entirely differentiated. In addition, many of the writers quoted in this book for their contributions in vocational psychology have also contributed in the journals to clinical and projective psychology.

The present volume is essentially an introduction to the problems and concepts of vocational guidance and employee selection with an emphasis on the former, though there is a discussion of job efficiency, job analysis and related topics. In the author's point of view occupational and clinical psychology do not seem to be isolated topics. He subsumes aptitudes, skills and sensorimotor functioning under personality rather than considering them independent functions. He does not, however, present a theory of personality, nor does he delve extensively into many of the problems he touches upon. Largely he surveys methodologic and technical considerations in macroscopic fashion. Personality theory is treated in terms of a summary of typological theories rather than as a dynamic concept. Nevertheless, he gives some attention to the use of projective methods, particularly the Rorschach, TAT, and Szondi in vocational guidance and selection and the Miro Myokinetic Test which may loosely be grouped with them. Little specific diagnostic or prognostic information is presented. There are virtually no experimental findings in either the projective or non-projective areas of personality measurement.

Chapters are devoted to concepts and types of intelligence, aptitudes and skills, standardization, and simple statistical concepts. A few tests are described in detail and many more significant ones are not mentioned. There is

an interesting description of organizations and points of view in 27 countries. Although there is a wide international flavor in the references, there is no list of references.

While the book is less detailed and comprehensive than most comparable texts in English, it should prove to be a useful introductory text for the groups for whom it was written. It is also significant in that it represents the very recent trend in Latin American countries toward writing their own texts in addition to translating foreign ones.

BERTRAM R. FORER
Executive Editor,
Journal of Projective Techniques

Aliaga Lindo, Pedro. *Estudio comparativo de la Prueba de Rorschach en 238 niños de Huachac y Lima.* Lima: Universidad Mayor de San Marcos, 1955. Pp. 188.

This monograph, the author's dissertation for the degree of Bachelor of Medicine, is a comparison by means of the Rorschach of the psychological development of two groups of Peruvian children: Huachac Indian children living in high mountain villages, bilingual and somewhat primitive culturally and the children of Lima, also of lower economic classes, who have been brought up in a cosmopolitan climate. The age range is from four to fifteen, grouped into four developmental periods: four to six, seven to nine, ten to twelve, and thirteen to fifteen. Samples are small, as low as zero in some year-sex groups; and median ages in the subgroups differ for the two cultural groups and for the two sexes. Hence, the developmental pictures are likely to be less reliable and less differentiated than those provided by Ames et al (1) and by Nunez (3). Furthermore, comparability of the findings to other cultural studies, even those quoted in the monograph, is somewhat dubious.

The author points out similarities and differences between the sexes, between his Indian and Caucasoid groups, and between his groups and those of Ames et al, Serebrinsky (Argentina), Salas (Spain), Loosli-Usteri (Switzerland), Endara (2) (Ecuador), Via Ortega (Peru), and several others. In this respect the monograph is a source of potentially useful cross-cultural information.

Scoring of the Rorschach includes Klop-

fer's classification of movement responses and Binder's classification of shading.

The monograph is well put together, clear in printing, chock full of lucid tables and graphs with summaries of the findings of other workers as indicated above. There are 62 references, most of them Latin American and unfamiliar to North Americans. As a whole the monograph is well-done and attests to the growing interest in the South American countries in projective methods, particularly the Rorschach. It is most commonly, however, included in the armamentarium of the psychiatrist rather than of the clinical psychologist.

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The authors present a rating scale with paradigms for evaluation of quality of human figure drawings among subjects beyond childhood. Reliability measures are presented.

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Therapeutic and projective-diagnostic data in a depressive case.

Le Gallais, Pierre. Arte e psicopatias. *Revista Brasileira de Saúde Mental*, 1955, 1, 121-140. (Rio)

In an attempt to provide a theoretical rationale for occupational therapy, the author discusses the therapeutic and motivational bases of artistic work.

Campos, Francisco. Os exames de personalidade nos processos de seleção. *Arquivos Brasileiros de Psicotecnica*, 1955, 7, 61-69. (Rio).

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Sandoval de Andrade, Geraldo. Primeiras tentativas de aplicação do PMK em cegos. *Arquivos Brasileiros de Psicotecnica*, 1955, 7, 89-91 (Rio).

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A general consideration of validation problems with projective methods, followed by more specific considerations of Rosenzweig's Picture Frustration and the Szondi tests.

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The author marshalls evidence to demonstrate the impracticability of clinical use of the Rorschach without an underlying theory more adequate than current ones.

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A defense of current Rorschach plate reproductions against Friedemann's criticisms.

(See previous paper.)

Missaglia, Antonello. Osservazioni sull'indagine dell'inconscio mediante il Test di Rorschach. *Annali Neuropsichiatria e Psicoanalisi*, 1955, 2, 223-231. (Napoli).

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Preoperative and postoperative Rorschach and Behn-Rorschach data are presented on a case of brain tumor.

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Demonstration of archetypal indications in 10 Rorschach protocols.

Society for Projective Techniques

The program of the annual convention of the American Psychological Association has been announced. The Society for Projective Techniques portion of this program reads as follows:

- Friday, August 31 — 3:50-4:50 — **Business Meeting**, Room 107, Hotel Sherman
- Friday, August 31 — 7:30-9:30 — **Symposium**, Assembly Room, Hotel Sherman
(The Adjustment of the Overt Male Homosexual)
(Klopfer, Ellis, Hooker, Frenkel-Brunswik)
- Saturday, Sept. 1 — 7:00-10:00 — **Dinner and Presidential Address**, Crystal Room, Hotel Sherman
(Jules D. Holzberg. The Clinical and Scientific Methods: Synthesis or Antithesis?)
- Monday, Sept. 3 — 3:50-5:50 — **Symposium**, Assembly Room, Hotel Sherman
(Validity Aspects of Multiple Projective Techniques in Child Research)
(Stone, Murphy, Kass, Heider, Bolgar)

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PAULINE VORHAUS

Social Interest, an Adlerian Rationale for the Rorschach Human Movement Response

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One of the well-established Rorschach interpretations is that seeing human movement in the inkblots (*M* response) is a sign of good adjustment. "*M* is an indicator of inner stability" (5, p. 576), "The well-adjusted adult should have three or more *M*'s" (5, pp. 255-256), and a positive relationship between frequency of *M* (within certain limits) and adjustment has been confirmed in numerous investigations (2, 3, 4, 7, 8). We propose to answer the question why this should be so, in terms of the postulate of Adler that adjustment is a function of social interest.

Social interest or social feeling is described by Adler as an evaluative attitude which "coincides in part with what we call identification or empathy. . . . Empathy and understanding are facts of social feeling, of harmony with the universe. . . . We speak of identification if a child aims to become like his father, to see with the eyes of the father, to 'understand' him, and so has a useful goal before himself. Freud, unawares, takes identification as meaning to seize the role of another in order to gain a personal advantage" (1, pp. 136-137). Adler speaks of social interest also as a "feeling of belongingness" (1, p. 138).

The relationship of social interest to adjustment is described by Adler as follows: "It is almost impossible to exaggerate the value of an increase in social feeling. The mind improves, for intelligence is a communal function. The feeling of worth and value is heightened, giving courage and an optimistic view, and there is a sense of acquiescence in the common advantages and drawbacks of our lot. The individual feels at home in life and feels his existence to be worth-

while just so far as he is useful to others and is overcoming common, instead of private feelings of inferiority. Not only the ethical nature, but the right attitude in aesthetics, . . . will always be founded upon the truest social feeling. . . . All failures — neurotics, psychotics, criminals, drunkards, problem children, suicides, perverts, and prostitutes — are failures because they are lacking in social interest. They approach the problems of occupation, friendship, and sex without the confidence that they can be solved by cooperation. . . . It is always the lack of social interest, whatever be the name one gives it—living in fellowship, cooperation, humanity, or even ideal-ego—which causes an insufficient preparation for all the problems of life. In the presence of a problem, this imperfect preparation gives rise to the thousand-fold forms that express physical and mental inferiority and insecurity" (1, pp. 155-156). "The only salvation from the continuously driving inferiority feeling is the knowledge and the feeling of being valuable which originates from the contribution to the common welfare. . . . Where this automatized social feeling is deficient, the individual's interest is too self-centered, and he feels that he is impotent or a nobody" (1, p. 155).

It is not difficult to accept the proposition that seeing human movement in the inkblots is a function of social interest. Today it is an axiom in psychology that our perceptions are influenced by our interests. If we are interested in food because we are hungry, we are more likely to see objects related to eating, when looking at an ambiguous picture, than we would see immediately after a meal (6). Likewise, one who has social

interest, who is interested in human beings, should see more human figures in inkblots, than one who has no social interest. The numerous explanations of the *M* response found in the Rorschach literature lend themselves well to this interpretation, and the following statements from the work of Klopfer *et al.* show that the essential characteristics of social interest quoted from Adler are seen as being implied in the *M* response. The *M* responses indicate an inner system of conscious values which sometimes "stresses interpersonal or social values" (5, p. 263). "The capacity for seeing human figures in the Rorschach blot materials is related to the capacity for good empathic relationships with other human beings" (5, p. 264). "The ability to see human beings... presupposes a tendency to identify with human beings" (5, p. 577). "There is considerable empirical evidence that subjects who have had unsatisfactory relationships with both parents tend to be unable to produce *M* responses" (5, p. 264). The *M* response implies creativity in the sense that the latter implies the capacity "to integrate inner experience with external reality and its demands" (5, p. 259). When they appear in a certain relationship to other determinants, *M* responses imply that "the individual has achieved an integration between his long-range value system and his impulse life so that both can exist concurrently without undue feelings of guilt or frustration. This implies self-acceptance" (5, p. 263). If the *M* response implies to such an extent what Adler meant by social interest, and if we accept Adler's postulate that social interest is the determining factor in adjustment, we can see clearly why the *M* response should be one of the best-established positive signs in the Rorschach test.

In view of the above, we offer the concept of social interest as interpretation of *M*. Klopfer introduces the interpretation of *M* by stating that it is "perhaps the most significant and

yet, interpretatively, the most elusive single determinant" (5, p. 254). We offer social interest as the generic term under which the specific interpretations that have been formulated can be brought together without doing them violence, and as a means of pinning down that which has appeared elusive.

Klopfer proposes as the generic explanation of *M* the concept of "ego tolerance for archaic forces" (5, p. 577). We believe, however, that social interest has certain advantages over Klopfer's formulation. These are: (1) The social interest concept corresponds more directly to the actual process involved in the *M* response. (2) Social interest corresponds more closely to a field-theoretical definition of adjustment, normality or stability, as essentially not a problem of the individual's relation to inner forces, but a problem of the individual's relation to his social situation. (3) Social interest establishes a palpable link between *M* responses and adjustment, the latter seen as essentially a problem of interpersonal relations.

The idea of "ego tolerance for archaic forces" would not have to be given up in the light of the concept of social interest, but would become subordinated to it. Everything else being equal, the self-centered individual, one who lacks social interest, would be more likely to have difficulties in integrating his archaic forces, his inner experience, with external reality and its demands, because the creative self-transcending orientation towards the external reality is lacking. On the other hand, the socially interested individual would tolerate archaic forces better, because, due to his social orientation, he would have a more objectified understanding and use of such forces.

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Prognostic Significance of the Underproductive Rorschach¹

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Experience with Rorschach protocols in an outpatient setting shows differences in the extent to which they reflect individual personality structures. In the typical protocol, information is more or less readily discernable concerning both the conflict areas and the defenses erected to cope with these conflicts. At one extreme from this usual record is the dilated, frankly bizarre performance. Such a record amply illustrates pathology but usually yields more equivocal information concerning those defenses available to the patient which make it possible for him to remain out of an institutional setting.

At the other extreme is the underproductive protocol, consisting of but few responses which are usually unelaborated, solely form-determined, of conventional quality, and based almost exclusively upon the stimulus properties of the blots. Phillips and Smith (5, p. 181) suggest that "... these criteria tend to cluster together; when one criterion for guardedness is present, others are likely to be present." For the purposes of this study, a distinction needs to be made between the terms "guarded" and "underproductive." Underproductivity is operationally defined solely in terms of the number of responses and number of rejections, and hence describes something about the quantitative aspects of a given protocol. The term "guarded" refers to that protocol which reveals little of the patient's underlying motivational patterns, and

hence the term describes something qualitative about the nature of the inferences which can be made concerning a patient's symptomatology and dynamics. While underproductive protocols are frequently guarded, this need not necessarily be the case. Similarly, a normally productive protocol may be quite guarded, although this occurs infrequently.

The underproductive protocol, reported as being obtained in about one-third of the cases with which the clinician deals, throws into relief the opposite problem from that described above in connection with the bizarre record. For the underproductive protocol, the difficult tasks are describing the pathology underlying such rigid defensive behavior and arriving at meaningful statements of prognosis and treatment goals. Phillips and Smith (5, pp. 182) summarize this problem by stating that

It is apparent that for the exhaustive description of a subject both stimulus determined and non-stimulus determined responses are important; the former to assess the subject's social conformity, the latter to delineate his individuality. . . . It is from unconventional responses and from elaborations of both conventional and unconventional responses that individuating characteristics are inferred and it is these individuating characteristics which are absent from the guarded record.

Accepting the fundamental assumption that behavior and attitudes expressed in the course of the Rorschach examination by a patient are characteristic of behavior and attitudes expressed by him in non-Rorschach situations, it follows that underproductive protocols are given by individuals who are equally reluctant to expose themselves in other situations, and in particular in their interactions with a therapist. This latter inference would suggest that a history of success-

¹ Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director. The statements and conclusions published are the results of the author's own study and do not necessarily reflect the opinion or policy of the Veterans Administration.

² This study was completed when the author was at the VA Regional office, Boston, Mass.

ful psychotherapy can be prognosticated by evaluating the extent of responsivity in the Rorschach examination; the greater the responsivity, the greater the likelihood of positive results. A search of the literature bearing on this hypothesis indicates equivocal support. The findings reported and summarized by Windle (6) suggest that "the prognostic utility of the Rorschach has failed to disclose any very encouraging concordance among studies for any diagnostic category." Work done by Gibby, *et al* (1) which evaluates studies completed since Windle's review indicates, however, that "... a common finding in all these studies was that the total number of responses (*R*) was consistently associated with continuance in therapy ... these findings would tend to suggest that *R* can predict as well as any group of Rorschach variables provided that a suitable cutting point is chosen."

It is frequently the case, however, that some patients who give underproductive Rorschach protocols show considerable improvement in psychotherapy. It is the purpose of this investigation to study a group of patients who give underproductive protocols and to attempt to develop empirical prognostic indices and principles which may make it possible for the clinical psychologist to be of greater service to the referring therapist.

HYPOTHESES

1. Patients with *underproductive* Rorschach protocols and good treatment histories will show significant differences in certain Rorschach scoring categories when compared with patients with underproductive Rorschach protocols and poor treatment histories.

2. Similarly obtained findings based upon patients with *normally productive* protocols and dichotomized in terms of treatment history will be located in certain Rorschach scoring

categories other than those found in the underproductive groups.

SUBJECTS

Forty-six psychoneurotic veteran outpatients were carefully selected according to the following criteria: (1) a minimum of dull-normal intelligence as measured by a full or abbreviated Wechsler-Bellevue Intelligence Scale; (2) no known or suspected intracranial pathology; (3) completion of a representative Rorschach examination prior to the fifth clinic contact, and (4) clearly evaluated treatment histories. The total group was dichotomized in two dimensions, i.e. Rorschach productivity, and therapeutic history. An underproductive protocol was defined as one which contained a maximum of ten scorable responses and at least one rejection. A normally productive protocol was defined as one which contained a minimum of thirty responses and no rejections.

Dictated notes, and, where indicated, conferences with therapists, were utilized in determining the therapeutic history. The criteria for a good therapeutic history were: (1) evidence of complete or partial remission of the symptoms which motivated the patient's seeking treatment; and (2) patient either actively in treatment at the time of data collection or discharged in accordance with a decision mutually formulated by the therapist and the patient prior to termination. The criteria for a poor therapeutic history were: (1) no remission of chief complaints; and (2) patient broke treatment without a mutually agreeable decision to that effect prior to such termination. In no case was a patient considered as showing a poor treatment history if he were actively in treatment at the time of data collection. Patients who did not meet both criteria for one or the other therapeutic history group were not used in the study.

The four groups were divided as follows: Eleven cases consisted of pa-

tients who gave underproductive Rorschach protocols and subsequently showed a good treatment history. Ten cases consisted of patients who gave underproductive Rorschach protocols and subsequently showed a poor treatment history. Thirteen cases consisted of patients who gave normally productive Rorschach protocols and subsequently showed a good treatment history. Twelve cases consisted of patients who gave normally productive Rorschach protocols and subsequently showed a poor treatment history.

RESULTS

The skewed nature of the obtained distributions and the small number of cases in each group necessitated the use of non-parametric statistics. The Mann-Whitney U-test (4) was used in evaluating the significance of the findings which are presented in Table I. The table presents the significant differences found between the underproductive groups with good and poor therapeutic history, and between the normally productive groups with good and poor therapeutic history, and presents the relevant data which permit inter-group comparisons. The seventeen variables evaluated for each group were: age, education, *IQ*, *R*, *T/R*, *W%*, *D%*, *d%*, *F%*, *F+*, *A%*, *H%*, *Sum C*, *Sum M*, *%R* comprising right half of psychogram, *%R* comprising left half of psychogram (3, pp. 252 ff.) and number of rejections

(for the underproductive groups only).

Of the thirty-three comparisons made, thirteen of the obtained differences were of sufficient magnitude to achieve statistical significance at the .10 level or better. A probability value as high as .10 was considered significant for the underproductive group only. A less rigorous confidence level was accepted for this group since the low ceiling of responses tends to reduce the significance of the obtained differences. Education, as measured by grades completed, is the only variable which distinguished the successful treatment history population from the group with histories of unsuccessful treatment for both the underproductive and normally productive groups. In the case of all other significant findings they apply either to the underproductive groups or to the normally productive groups. Because such different variables are relevant for the two groups, and so little overlap exists, these findings suggest that groups of patients dichotomized on the basis of Rorschach productivity may be qualitatively different from each other and should not be grouped together for prediction purposes.

Those patients within the underproductive group who did well in psychotherapy gave more responses and rejected fewer cards. They were considerably more spontaneous (*T/R*) and did not exercise as much control over their perceptions as the members

TABLE I. Significance of Differences Between Comparison Groups

Variable	Underproductive Treatment History			Normally Productive Treatment History		
	Good	Poor	Sig.	Good	Poor	Sig.
<i>IQ</i> (Wechsler).....	109.7	108.1	NS	120.1	104.6	.05
Education.....	11.7	9.8	.10	13.5	10.7	.01
<i>R</i>	8.9	7.1	.10	42.7	40.7	NS
<i>T/R</i>	47.3	75.3	.02	27.0	32.0	NS
Number of Rejections.....	2.2	3.8	.10	.....	.....	.....
<i>F%</i>	47.1	65.6	.10	54.5	62.5	NS
<i>%R</i> — Left half.....	37.2	15.9	.05	22.6	24.6	NS
Sum <i>M</i>	1.0	0.5	.10	3.4	2.8	NS
<i>%R</i> — Right half.....	15.8	18.4	NS	23.0	12.7	.02
Sum <i>C</i>	0.6	0.5	NS	4.9	2.8	.05
<i>A%</i>	59.1	53.3	NS	37.9	49.2	.05
<i>H%</i>	15.5	8.0	.10	8.3	8.4	NS

of the underproductive group who did poorly in treatment ($F\%$). These findings suggest that degrees of guardedness exist within a group of underproductive Rorschach protocols and that while productivity as such may often not be significantly related to therapeutic success, a greater degree of guardedness seems to be associated with a less favorable outcome in psychotherapy.

Those patients within the underproductive groups who do well in psychotherapy seem, in addition, to be characterized by significantly more available inner resources ($\%R$ —left half of psychogram, Sum M , and $H\%$). Their fantasy living has not diminished as extensively as have their interpersonal contacts ($M:C$). Patients within the underproductive groups who do not show evidence of constructive fantasy do not seem to profit from psychotherapy. Availability of inner resources, even while circumscribed, seems to be important in order that underproductive patients show therapeutic gains.

Factors which discriminate between normally productive individuals with good treatment histories and normally productive individuals with poor treatment histories are most prominently located in those dimensions of the Rorschach pertaining to dealings with the outside world. Those patients who do well in psychotherapy, in addition to indicating significantly more education and demonstrating higher functioning intelligence, are significantly more sensitive to external stimulation and responsive to emotionally provoking situations ($\%R$ —right half of psychogram, Sum C). Their behavior is much less stereotyped ($A\%$) although this factor may be related to their higher intellectual level. Thus, for the normally productive individuals, whose behavior outside of the Rorschach examination is probably equally expressive, the extent of their interpersonal relations seems to play a significant role in determining

therapeutic success. For the underproductive individuals, whose behavior outside of the Rorschach situations is probably equally withdrawn and restricted, the availability of their inner resources seems most relevant in suggesting therapeutic outcome.

When the total population of this study is grouped together independently of Rorschach responsivity, and an analysis made to examine the differences between the patients solely in terms of differences in treatment history, all of the above findings, with the exception of differences in educational attainment are obscured.

DISCUSSION

Numerous attempts have been made to develop prognostic rating scales which might assist the psychologist in casting valid statements concerning treatment goals and treatment potentiality. Within the past five years, the Rorschach Prognostic Rating Scale developed by Klopfer (2) has attracted considerable attention. Research to date with this prognostic device (3, pp. 688-699) indicates that it offers much promise. It might be of interest to report on the use of this scale with the present population. Within the normally productive groups, the scale was able to discriminate between the patients with differing histories of treatment. The mean scale rating for the normally productive group with good treatment history was 5.2. The mean scale rating for the normally productive group with poor treatment history was 1.0; this difference attained a .02 level of significance. Within the underproductive groups, however, the scale was unable to differentiate significantly between the two groups differing in treatment histories. The mean value of the scale for the underproductive group with good treatment history was 2.2, and the mean value of the scale for the underproductive group with poor treatment history was 2.3. This finding highlights the special

considerations and difficulties involved in making prognostic statements concerning patients whose Rorschach protocols are underproductive.

In his recent discussion of the problems involved in making the investigation of prognostic indices reasonably effective, Windle (6) points out the need for relatively homogeneous populations and conditions. He indicates that many studies have found prognostic indices applying differentially for various groups differing in diagnosis, chronicity of illness, or treatment modality. The present study suggests that the nature of the test protocol itself (in this case, the Rorschach examination), may be a dimension along which homogeneity must be established. In particular, differential prognostic indices have been found for patients with normally productive protocols as compared to patients with underproductive Rorschach protocols. Present results suggest, further, that indiscriminate combining of patients into improved and unimproved groups without consideration of the nature of the protocols may actually serve to increase the difficulties involved in the complex problems of prognostic indices.

Analysis of the present findings suggests that normally productive psychoneurotic outpatients utilize different defensive patterns when compared with the defenses used by psychoneurotic outpatients who give underproductive protocols. The nature of the prognosis seems to depend on the adequacy with which the patients in each group are defending against their underlying conflicts. For the underproductive group, a good treatment history seems to characterize those patients who have some inner resources and mature fantasy life to compensate, as it were, for their withdrawal from interpersonal living. For the normally productive group, whose members seem to be using productivity and interaction with the environment partly in the service of defense,

the nature of treatment history seems related to the degree to which these interactions are characterized by affective sensitivity and display. Thus within each group, those patients whose defenses are operating most successfully seem to do best in treatment. The nature and success of these defenses, however, is reflected differentially as a function of the normal productivity - underproductivity dichotomy.

The conclusions drawn from the results of this analysis must be limited because of the lack of cross-validation. Since the results of this study were obtained without independent replication, ultimate validation must depend upon confirmation utilizing new groups. The present results have been described to facilitate further research upon which the determination of their prognostic value must rest.

SUMMARY

A group of forty-six psychoneurotic outpatients was divided into four subgroups on the basis of treatment history and Rorschach productivity. While only education, as measured by grades completed, discriminated between those patients with good treatment histories and those patients with poor treatment histories for both the normally productive and underproductive groups, several factors emerged as prognostic indices in the underproductive group which were different from similarly obtained indices in the normally productive group. Within the underproductive group, a good treatment history characterized the least guarded individuals, and those with the greater degree of available inner resources and fantasy living. Within the normally productive group, on the other hand, a good treatment history characterized those individuals with a higher level of education and functioning intelligence, and those individuals who are able to deal with interpersonal situations most exten-

sively. Because the results of the present study indicate that different factors are related to therapeutic outcome in the normally productive groups as compared with the under-productive groups, it is suggested that Rorschach productivity may need to be more carefully controlled in studies designed to formulate prognostic indices.

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Thematic Apperception as a Measure of the Hunger Drive¹

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The present study has the following aims: (a) to determine whether thematic apperception can distinguish between a satiated control group and a mildly hungry experimental group when neither has reason to suspect the study is food-related, and (b) to investigate the validity of several scores of thematic apperception as measures of hunger. Although the hunger drive is not particularly meaningful clinically, it has the advantage that it can be controlled experimentally and may provide a baseline for the investigation of more complex drives.

A search through the literature reveals but one study on thematic apperception and hunger (1). This study involved a comparison of Ss (subjects) who had not eaten for 1, 4, and 16 hours. It was found that although total number of food-related responses failed to distinguish the groups, certain sub-scores did. With increased hunger there was an increase in food-deprivation themes, need for food, and activity in which obstacles to securing food were overcome. At the same time, a decrease in goal activity (i.e. eating) and friendly press occurred. Certain limitations in the study require its conclusions to be considered with caution. For one, with but a single exception, significant results were obtained only for the 16-hour deprivation period, which had been induced by confining Navy Ss to barracks. Considering that the Ss had reason to suspect the study was food-related, this factor, rather than hunger, may have determined the results. In this connection, it is of interest that the 4-hour experimental

group, which had no reason to suspect the nature of the study, was differentiated from the 1-hour control group only by a single measure, *Need food*. Although the authors pay little attention to this finding, it is the score which is closest to the Murray system (13), and suggests that this system deserves further exploration. A further limitation is that the Es (experimenters) knew which hunger group each protocol belonged to at the time of scoring.

A serious problem in methodology occurs in working with the hunger drive in that it is generally not possible to induce deprivation without requesting or somehow making the Ss refrain from eating. This procedure invariably offers clues as to the nature of the study. Generally it is assumed that this variable is unimportant and no effort is made to control it other than to give misleading directions. In one study there was even a deliberate attempt to induce a "food set" in the experimental group but not in the control group (9). If the relationship between the hunger drive and certain mental activities are to be understood, it is necessary for future work to control for the constant bias induced by such methodology. The least that could be done would be to investigate the effect of giving an alternate control group information that the study is related to hunger.

One way of circumventing the difficulty associated with specific sets toward experiments on food deprivation is to test Ss at different intervals between regular meals. This, of course, has the disadvantage that it deals only with very modest hunger. On the other hand, a few studies on perception have obtained positive findings with such a technique (8, 9, 15, 16).

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It may be that their results were partly a function of anticipation associated with approaching meal time rather than tissue needs (8, 16). However, this merely indicates that hunger is influenced by social learning, and no methodological problem is indicated so long as it is kept in mind in the interpretation of the results.

METHOD

The Ss were 59 male students enrolled in an introductory psychology course at the University of Massachusetts. Of the total group, 32 had schedules which allowed them to be tested at 1:00 P.M. and 27 had schedules which allowed them to be tested at 5:00 P.M. The groups will be referred to, respectively, as the control and hungry groups. After testing was completed, a questionnaire was filled out indicating when S had eaten his last meal, whether he had eaten anything since, and what his subjective rating of his hunger was at the moment. The data from seven experimental Ss who had between-meal snacks were discarded, leaving a total of 20 Ss in the hungry group and 32 in the control group. Highly significant differences between the groups in their rating of subjective hunger confirmed the assumption that the testing periods made a difference. All data were coded so that the Es had no idea which records they were scoring.

In obtaining thematic apperception stories, the group method described by Atkinson and McClelland (1) was followed, with the exception that four minutes rather than five were allowed for writing. The pictures were taken from the standard TAT (13), the Symonds Picture-Story Test (17), and from various magazines. Transparencies were made and projected on a screen. Following is a description of the eight pictures, preceded by their code letters, in order of presentation:

A. A man with a cigarette in his mouth is seated at a table and appears to be in deep thought. A nickelodeon is in the background.

- B. A young man is walking from one room toward another. The shadow of a woman's figure is visible. On a table off to the side is a lamp, clock, and dish of fruit, none of which is prominent in the projection (Symonds picture A 6).
- C. A boy is sitting at a table on which there is a candle and a wooden bowl with a spoon in it. The picture is in deep shades of gray, giving it a somber appearance.
- D. A woman is clutching a man as if restraining him (TAT picture 4).
- E. A young woman is holding a frankfurter to the mouth of a young man. They are seated at a table laden with food. Both are smiling.
- F. A dimly illumined figure is leaning against a lamp post (TAT picture 20).
- G. The pensive face of a young boy with dark eyes is staring into space. He is dressed shabbily and his face is smudged.
- H. Two figures are walking along a dirt road approaching a gate.

The themas were scored in several different ways. For one, all the scoring categories described by Atkinson and McClelland (1), with the exception of *hostility* and *anxiety*, neither of which they found promising, were investigated. In addition, three other scores were introduced. Following is a description of all scores, the Atkinson and McClelland scores being described briefly as a fuller description is available elsewhere (1):

Atkinson and McClelland Scores

Food imagery—Any reference relating to food or eating.

Food thema—Food getting or enjoying activities are central to the plot.

Deprivation thema—Deprivation of food is central to the plot.

Other themas—Food imagery occurs but is not central to the plot.

Need food—Someone in the story states that he desires food.

Food deprivation—Deprivation of food occurs, but is not necessarily central to plot.

Instrumental activity—Activity is aimed at getting food (If) or at removing deprivation (Id) which is successful (+), unsuccessful (—) or of unknown outcome (0).

Goal activity—Someone is eating, will eat after the action, or has just finished eating.

Phantasy—Someone is dreaming or phantasing about getting food.

Wish-fulfillment—Someone's need for food is satisfied by fortunate circumstances rather than by his own efforts.

Substitution—Some other need is satisfied in place of hunger.

Friendly press—Someone is invited to eat or helped to get food.

Murray Need Food

This score is an adaptation of the Murray scoring system (13) to the hunger drive. It involves a global judgment of the strength of the story teller's need for food based upon the intensity of the hero's need, importance of food to the plot, frequency with which food or hunger are mentioned, and duration. Although Murray recommends a weighting system of 1-5, in the present study weights of 1-3 were used as they could be judged more objectively and were deemed adequate for measuring group differences. A basic weight of 1 was assigned to the slightest indication of hunger (e.g. "The boy is eating."), of 2 when moderate hunger could be inferred (e.g. "He would like to eat as it is supper time."), and of 3 when strong hunger could be inferred (e.g. "He will have to find something to eat or starve."). The basic weight was then modified by taking into account centrality, frequency, and duration.

Additional Scores

Hunger of hero—This score is similar to *Murray Need Food* in that it is a weighted measure which takes into account the hero. It differs in that it is scored negatively as well as positively and considers no factors other than the inferred hunger of the hero. Following are the standards for assigning weight.

- 3: Despite coercion the hero will not eat or the outcome is uncertain (e.g. "She insists that he eat his supper or be confined to his room. He will not eat it.").
- 2: The hero displays a moderate tendency to avoid eating or to find food unappealing. He will eat if coerced but will not enjoy the food (e.g.

"He is not hungry, but she makes him eat it.").

- 1: The hero shows a slight tendency to avoid eating, but eats something without coercion (e.g. "He eats part of his dinner and falls asleep over it.").
- 0: No reaction of the hero to food is indicated (e.g. "He is looking at the food on the table.").
- 1: The hero is less hungry than the degree of hunger normally expected at meal time. This weight was assigned when the hero was having a between-meal snack or was simply described as eating a meal with no mention of hunger (e.g. "He is eating.").
- 2: The hero is moderately hungry, at a level that would be expected immediately before meal time. This weight was assigned when the hero was described as eating a regular meal and there was some indication that he was enjoying it or hungry (e.g. "It is supper time, and he is hungry.").
- 3: The hero is hungrier than before a regular meal. A strong desire or some real deprivation is indicated (e.g. "He must eat before long or he will starve to death.").

Appealingness of food—This score is similar to *Hunger of hero* in that it is a weighted measure and is scored negatively as well as positively. The essence of the score is the determination of how desirable the particular food described is. Although the score is partly a function of the hunger of the hero, the need for a separate score was indicated by stories, mainly to picture C, in which the hero was hungry but did not like the food available. Following are the standards for assigning weights:

- 3: The food is described as of poor quality and will not be eaten despite coercion or real hunger, or the outcome is uncertain (e.g. "He will not eat this awful food, but dreams of a decent meal.").
- 2: The food is distasteful, but it will be eaten by someone who is hungry or coerced (e.g. "He would like something better to eat, but is very

- hungry and takes what he can get.").
- 1: The food is slightly unappealing, but some of it will be eaten without undue hunger or coercion (e.g. "His father will give his unfinished meal to the dog.").
 - 0: There is no indication of whether the food is appealing or unappealing (e.g. "The boy is seated in front of a bowl of food.").
 - 1: The food is normally acceptable (e.g. "The boy is eating his supper.").
 - 2: The food is of a fairly desirable type to a normally hungry person or an ordinary food to a hungry person, (e.g. "The boy is eating a tasty meal.").
 - 3: The food is very appealing. Either it is a particularly desirable food to a moderately hungry person or a fairly desirable food to a very hungry person (e.g. "He can't wait to taste the delicious pie she has made for him.").

In order to obtain the final scores on thematic apperception, both *Es* independently scored 10 records selected at random. Discrepancies were discussed and examples of difficult scoring problems were taken down as guides for further scoring. These records were omitted in the computation of reliability figures. Following this, both *Es* independently scored the

remainder of the records. Finally discrepancies were resolved by discussion, the more conservative score being selected whenever agreement could not be reached.

RESULTS

Interscorer reliability. In order to determine interscorer reliability it was necessary to treat the weighted scores differently from the unweighted scores, as the latter did not have sufficient range to permit the computation of Pearson product-moment correlation coefficients, as did the former. A measure of percent agreement was computed for the unweighted scores by dividing the number of agreements in a scoring category by the number of times the category had been scored by at least one *E*. In Table I it can be seen that the weighted scores produce fairly high coefficients, ranging from .93 to .96, despite their relatively global and inferential characteristics. On the other hand, the unweighted scores, although involving only a judgment of presence or absence, are sometimes relatively unreliable (see Table I). One reason for this finding is the low frequency of occurrence of some scores. A second

TABLE I. Percentage of *Ss* in Control and Hungry Groups Above Median Cutting Point for all Thematic Apperception Cards Combined

TAT Scores	Scorer Agreement	Breaking Point	One-hour Depriv. (N=32)	Four-hour Depriv. (N=20)	Chi-Square
Non-weighted Scores					
Food imagery.....	98%	2-3	44	65	2.14
Food central.....	88%	1-2	56	55*
Food thema.....	94%	1-2	47	45	.....
Deprivation thema.....	50%	0-1	16	30	.....
Other thema.....	92%	0-1	56	90	6.58**
Need food.....	83%	0-1	50	60	.....
Food deprivation.....	76%	0-1	50	55	.....
Instrumental activity.....	58%	0-1	34	40	.....
Successful.....	50%	0-1	28	35	.....
Goal activity.....	94%	1-2	63	70	.....
Friendly press.....	67%	0-1	50	45	.....
Weighted Scores					
Murray need-food.....	r = .95	3-4	53	65	.....
Hunger of hero.....	r = .93	3-4	41	60	1.85
Appealingness of food.....	r = .96	1-2	50	55	.....

Note: Only chi-square values greater than 1.0 are reported.

** Significant at the .02 level.

consideration is that scoring presence or absence results in either complete agreement or disagreement, whereas with weighted scores discrepancies of more than one interval rarely occurred. When all unweighted scores are pooled, a figure of 86% agreement is obtained which compares favorably with the 75-80% agreement reported by Atkinson and McClelland (1). Considering that final scores were determined by agreement between both Es, all reliability figures can be assumed to be minimal.

Results on all pictures combined. Scores were first obtained for all pictures treated as a whole. To evaluate differences between the hungry and control groups, pooled frequency distributions were obtained for each score. A cutting point as close to the median as possible was established, and the number of Ss in each group above and below this point was determined. Chi-square tests of independence were then computed, Yate's correction being used whenever expected frequencies of five or less occurred. The following scores could not be investigated because too few examples were elicited: *Phantasy*, *Wish-fulfillment*, *Substitution*, *Instrumental activity* of doubtful or unsuccessful outcome or aimed at removing deprivation. The findings are summarized in Table I, where it can be seen that there is a non-significant tendency for the hungry group to tell more stories with food imagery than the control group ($p=.15$). The only score which differentiates the groups significantly is *Other thema*, which is scored when food-imagery is incidental to the plot, and on which the hungry group received a higher score than the control group (.01 level). As for stories in which food is central to the plot, the two groups are almost identical. Consequently, the tendency for the hungry group to give more total food-imagery than the control group is a function of an increase in weak food responses.

From Atkinson and McClelland's findings (1), it would be expected that the hungry group would demonstrate an increase in *Deprivation themas*, *Need food*, and *Instrumental activity* successful in overcoming deprivation, and a decrease in *Goal activity* and *Friendly press*. None of these scores in the present study significantly differentiates the hungry and control groups. The first two scores separate the groups in the expected direction, the third score could not be evaluated, the fourth score separates the groups in the opposite direction, and on the last score the groups are almost identical. Considering that not all scores predict in the manner found by Atkinson and McClelland, combining them into the composite score they recommend is not indicated.

None of the weighted measures in Table I differentiates the groups significantly, but in all cases the hungry group obtains a higher score than the control group. The score that most approaches significance ($p=.18$) suggests a greater tendency for the hungry group to attribute hunger to the hero in its stories than the control group.

The effect of stimulus-relevance. Stimulus-relevance, or picture-pull, was investigated by determining the percent of Ss who gave food imagery responses on each card. The results are as follows: card A: 22%, card B: 8%, card C: 73%, card D: 3%, card E: 88%, card F: 2%, card G: 25%, card H: 29%. It is apparent that two pictures, C and E, account for most of the food imagery. Considering that all other scoring categories were lower than *Food-imagery* in frequency, the above figures are not entirely representative of the other scores. For example, picture E elicited themas in which food was central to the plot from 67% of the Ss and picture C from 47% of the Ss, indicating that the two pictures differ more in *Central themas* than they do in *Food-imagery*. All pictures other than C and E elicited so few examples of all scores

TABLE II. Percentage of Ss in Control and Hungry Groups Above Cutting Point as Related to Picture-pull of Thematic Apperception Cards

TAT Scores	Deprivation Group	Picture-Pull			Chi-Square for Differences between Groups		
		Low	Med.	High	Low	Med.	High
Non-weighted Scores							
Food imagery.....	1-Hour	53	75	91	3.84*	.....	.....
	4-Hour	80	70	90			
Food central.....	1-Hour	40	40	75	.....	.....	2.24
	4-Hour	45	50	55			
Food thema.....	1-Hour	31	34	75	.....	.....	2.24
	4-Hour	25	45	55			
Deprivation thema.....	1-Hour	10	6	.....	1.27†	.....	.....
	4-Hour	25	5	.....		
Other thema.....	1-Hour	22	31	15	11.84***	.....	1.65†
	4-Hour	70	20	35			
Need food.....	1-Hour	22	25	9	3.09	.....	.....
	4-Hour	45	30	15			
Food deprivation.....	1-Hour	19	28	.....	2.82	.....	.....
	4-Hour	40	25	.....		
Instrumental activity.....	1-Hour	19	6	9	1.01†	.....	.....
	4-Hour	35	10	5			
Successful.....	1-Hour	15	.....	9	1.65†	.....	.....
	4-Hour	35	.....	5			
Goal activity.....	1-Hour	40	50	87	1.02	.....	.....
	4-Hour	55	45	85			
Friendly press.....	1-Hour	15	12	37	.....	.....	1.77
	4-Hour	20	20	20			
Weighted Scores							
Murray need food.....	1-Hour	56	44	72	3.07	.....	5.10*
	4-Hour	80	40	40			
Hunger of hero.....	1-Hour	47	44	62	3.05	.....	11.35***
	4-Hour	70	35	35			
Appealingness of food.....	1-Hour	31	34	50	2.88	1.24	3.20
	4-Hour	55	20	25			

Note: Only chi-square values greater than 1.0 are reported. Yate's correction was used whenever an expected frequency of five or less occurred. A chi-square of 2.71 is significant at the .10 level; 1.64 at the .20 level.

* Significant at the .05 level.

*** Significant at the .001 level.

† Yate's correction was used.

that, after determining that they did not predict in opposite directions, they were combined into a single measure. Taking all scores into consideration, card E may be classified as high, card C as moderate, and all other cards as low in stimulus-relevance or picture-pull.

Table II presents the results for the hungry and control groups on all scores arranged according to picture-pull. It is apparent that significant findings emerge which did not appear when picture-pull was not considered. The reason for this is that several

scores give opposite results for low and high picture-pull. Moderate picture-pull fails to differentiate the groups on any score, and will not be considered further. Total food-imagery is significantly higher (.05 level) for the hungry group on cards low in picture-pull. That this result is an outcome of the hungry group telling more stories where food enters only incidentally is indicated by the highly significant findings (.001 level) on *Other thema* and the lack of differentiation by thesias where food is central to the plot. The same conclusion is indicated

by the responses to high picture-pull, where the hungry group, relative to the control group, gives more themas in which food is incidental ($p=.20$) and fewer themas in which food is central ($p=.13$) to the plot. It thus appears that the hungry group tends to under-respond to strong stimulus cues and to over-respond to weak ones. This accounts for the one significant finding when all pictures were combined, i.e., *Other thema* can indicate either an over-response to a weak stimulus or an under-response to a strong stimulus.

Further evidence supporting the above conclusion is offered by the three weighted scores. In every case the hungry group obtained a higher score on low picture-pull and a lower score on high picture-pull than the control group. The results, as evaluated by chi-square, approach significance in all instances and reach significance for *Murray need food* (.05 level) and *Hunger of hero* (.001 level) on high picture-pull (Table I). A more effective test of the differential response of the two groups to different extremes of picture-pull was made by a double-classification analysis of variance. In order to keep the cells equal, excessive Ss in the control group were dropped by eliminating those with the highest subjective hunger ratings. To correct for the skewness of the distributions and the resultant correlation between means and variances, all distributions were transformed by adding .5 to the raw scores and extracting the square root of the sum. For reasons that will be apparent below, algebraic signs were disregarded in the score *Appealingness of food*. The results were such that no significant differences were found between the groups when picture-pull was not taken into account. However, on all three measures the interaction between hunger and picture-pull was significant beyond the .01 level. The direction of the means was consistent with the conclusions arrived at from

the chi-square analyses. Namely, the hungry group obtained higher scores than the control group in responding to low picture-pull and lower scores in responding to high picture-pull.

Two weighted scores, *Hunger of Hero* and *Appealingness of food*, include both positive and negative ends of a continuum. It is of interest to examine these further, treating the negative and positive ends separately, to determine whether stories about unhungry heroes and unappealing food predict in the opposite direction from stories about hungry heroes and appealing food. On *Hunger of hero*, negative scores occur only on card C, the card with moderate picture-pull. The hungry and control groups give the same proportion of negative, neutral, and positive scores on this measure. On *Appealingness of Food*, negative scores occur both on card C and on card E. A comparison on card C of the percent of control and hungry Ss, in that order, who give each type of response is as follows: negative responses — 28% vs. 25%; neutral responses — 38% vs. 55%; positive responses — 34% vs. 20%. There is thus a non-significant tendency for the hungry group to give more neutral and fewer positive responses than the control group. A comparison on card E, the card highest in picture-pull, of the responses of control and hungry Ss, in that order, is as follows: negative responses — 16% vs. 5%; neutral responses — 12% vs. 25%; positive responses — 72% vs. 70%. There is apparently a non-significant tendency for the hungry group to give more neutral and fewer negative responses than the control group. If the frequency in the neutral category is expanded to include very weak negative and positive responses (i.e. -1 to $+1$), rather than only responses scored zero, 35% of the control group and 70% of the hungry group falls into the neutral category, yielding a chi-square of 5.20, which is significant at the .05 level of confidence. It may

be concluded that the hungry group tends to give excessive neutral responses in its stories to pictures of high picture-pull, and that this reaction, rather than an increase in negative responses, is the reason for its low score on *Appealingness of Food*.

An inspection of Table II reveals non-significant tendencies for the hungry group relative to the control group to give more responses to pictures low in picture-pull which indicate a need for food, food deprivation, and activity related to the acquisition and consumption of food. *Need food* is one of the few scores on which the hungry group gives more responses than the control group at all levels of picture-pull, although only for low picture-pull is significance approached ($p=.08$). To a picture high in picture-pull which portrays friendly press, the hungry group tends to give fewer theas dealing with friendly press than the control group. This finding is consistent with other scores indicating that the hungry group under-responds to high picture-pull.

Phenomenological Hunger

On the basis of ratings of subjective hunger, Ss were divided into a phenomenologically hungry group and a control group, the former containing 19 Ss, the latter 33 Ss. All comparisons made for the hungry and control groups as determined by time since last meal were repeated for the groups divided according to phenomenological hunger. The results were almost identical and need not be presented. The similarity in findings can be accounted for by a tetrachoric correlation of .85 between phenomenological hunger and time without food.

DISCUSSION

Stimulus and drive dimensions. A finding of considerable interest in the present investigation is that when all pictures were combined, the resultant scores were relatively ineffective in differentiating the hungry and control

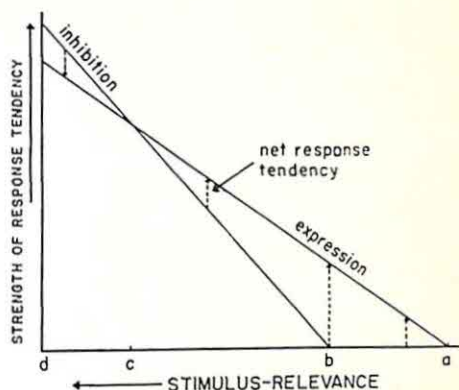


FIGURE 1. Tendencies to express and inhibit responses to a projective technique as a function of need-relevance of the stimulus cues.

(*Net response tendency* refers only to the increment or decrement associated with the drive state itself. The overall likelihood of a need-relevant response is a function of the normal expectancy associated with the degree of stimulus-relevance involved plus the drive-related increment or decrement.)

groups, but when the pictures were divided according to picture-pull highly significant differences emerged. Relative to the control group, the hungry group over-responded to pictures low in picture-pull and under-responded to high picture-pull. This latter finding suggests that even slight hunger is associated with an inhibitory reaction, which is somewhat surprising considering that the hunger drive is not normally associated with guilt. A theoretical approach that can account for the findings is suggested by Miller's view on displacement (12). An adaptation of this approach to projective techniques is presented in Fig. 1. In this figure, the gradient of projective expression is represented as less steep than the gradient of inhibition.²

² Since writing this article it has come to the authors' attention that Auld recommends a similar approach (2). However, whereas Auld relates inhibition to unacceptable needs, the present approach relates inhibition to autistic expression of physiological drive states. Whether inhibition of acquired drives which are not socially disapproved occurs remains for further work to determine. In either

The net response tendency associated with the drive-state, indicated by the discrepancy between expressive and inhibitory tendencies, is seen to increase as stimulus relevance increases up to its maximum at point b. After point b, net response tendency decreases up to point c, where it is zero, and thereafter becomes increasingly negative. The points correspond to what was found in the present study. The pictures low in picture-pull, to which the hungry group gave more food responses than the control group, can be considered to fall between points a and c. The picture of moderate picture-pull, to which the hungry group responded no differently from the control group, can be considered to fall at point c. The picture of high picture-pull, to which the hungry group gave fewer food responses than the control group, can be considered to fall between points c and d. Atkinson and McClelland's findings (1) are consistent with the above formulation in that they found that on pictures of relatively low picture-pull, a 16-hour deprivation group obtained higher scores than a 1-hour deprivation group, but the results were opposite on pictures which depicted goal activity. It remains to be determined whether high picture-pull alone is sufficient to induce inhibitory reactions, or whether goal-activity must be portrayed.

A number of studies have reported that, holding the stimulus constant, with increasing hunger, food responses increase for a brief period and then decrease (9, 16, 18). In a study which continued the deprivation period through semi-starvation, it was found that food-responses were no greater at the end of the starvation period than following satiation (6). As a result of such findings, several investigators have postulated that the hunger drive is associated with reactions of both an

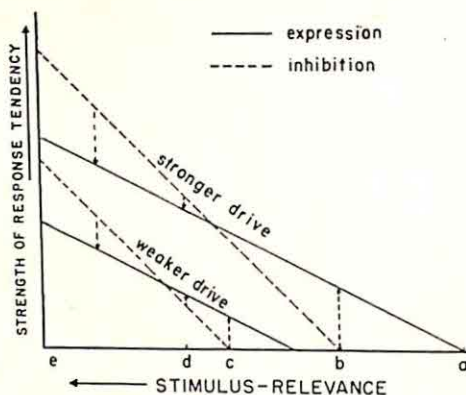


FIGURE 2. Tendencies to express and inhibit responses to a projective technique as a function of need-relevance of the stimulus cues at two levels of drive strength.

autistic and realistic nature, the former being dominant at low intensities of hunger and the latter at high intensities (18). In terms of the theoretical framework of the present study, autistic reaction is analogous to projective expression and realistic reaction to the inhibition of such expression.³ In Fig. 2, drive states of different intensities are depicted. For simplicity, the more intense drive is represented by an equal heightening of the expressive and inhibitory gradients. Other assumptions, such that the inhibitory gradient would be raised higher or its slope become steeper, would equally well account for the facts. It is apparent in Fig. 2 that for the higher drive state, the point at which the inhibitory and expressive gradients intersect is further to the right, indicating that net inhibitory responses occur to more remote stimuli. Holding the stimulus constant, point d is seen to be associated with a net inhibitory tendency

³ The view taken in this paper is consistent with the formulations of psychoanalytic ego-psychology on the relationship between drive states to thinking. Rapaport, as a representative of this approach, explains thinking as a hierarchic interaction of drive-oriented primary process and reality-oriented secondary process. (14)

event, it is apparent that social disapproval of a drive should result in a heightening of the gradient of inhibition.

for the higher drive and a net expressive tendency for the lower drive. On the other hand, if a more remote stimulus is selected, as at point b, the expressive tendency is greater for the higher drive than for the lower one. If sufficiently high drive states were represented, stimulus b would also finally elicit net inhibitory reactions. In short, the amount of deprivation at which a falling off of food responses occurs is dependent upon the nature of the stimulus. This may explain the lack of agreement in studies which have used different stimuli.

Why should the gradient of inhibition be steeper than the gradient of expression? A clue is afforded by the finding that inhibitory reactions can be induced either by a weak drive and a strong stimulus or, as reported in the literature, by a strong drive and a weak stimulus. In that the strong drive serves as a cue-producing response (4), both findings reduce to the same principle. Namely, inhibitory reactions are more dependent upon cues than expressive reactions, or, in other words, for a constant change in stimulus cues, inhibition can be expected to vary more than expression. In addition, it may be considered that hunger, as a physiologically anchored reaction, is less dependent upon learning than is inhibition. That inhibition is based upon a higher order of conditioning than autistic expression is also supported by evidence that under extreme deprivation the inhibitory gradient breaks down and autistic expression becomes dominant (3).

It is self-evident that an individual's ability to inhibit expression of his drives and impulses is of considerable importance to the effectiveness of his adjustment. (Within the confines of the present experiment, it would be punishing for a college student to experience fantasies about food at a time when he cannot eat, and it would even be more inappropriate for him to

permit the need to influence his responses to external stimuli.) Considering that inhibition is so basic to adjustment, it is reasonable to assume it is a highly over-learned reaction not dependent upon verbal awareness. In this connection, it would be of interest to investigate individual differences in ability to inhibit reactions to hunger and to determine how general such control is for other drives, particularly ones associated with guilt and repression. A second problem to be investigated is whether acquired drives that are not normally socially disapproved of are associated with inhibitory gradients.⁴

Response characteristics. The score which least demonstrated the effect of inhibition was the number of stories in which food entered only incidentally. On the other hand, the score most affected by inhibition involved direct projection of hunger unto the hero. These findings suggest that the nature of the response must be taken into account in representing gradients of inhibition and expression. In that direct and strong responses are the ones that produce the strongest need-relevant cues, it is not surprising that these are the ones most subject to inhibition. A finding of some interest is that defensiveness tended to be manifested by constriction rather than reaction-formation. Had predictions been made on the latter basis, they would have been in the opposite direction from the true state of affairs. It remains for future work to explore systematically expressive and inhibitory

⁴McClelland et al (10) report some preliminary work on *n Achievement* as related to picture cues. They found that pictures of different cue-value separated low and high *n Achievement* groups equally well. This would suggest either that inhibitory gradients do not normally apply to socially acceptable acquired drives, such as *n Achievement*, or that the range of cues and the strength of need investigated were not sufficient to arouse inhibitory reactions on a broad enough scale. The authors do cite evidence in support of inhibitory reactions in some cases.

gradients as a function of different response measures.

The results in the present study did not correspond with Atkinson and McClelland's findings on types of response that are most directly associated with hunger. This may have been a result of any of the following differences: (a) the conclusions of the Atkinson and McClelland study were based mainly on 16 hours of deprivation as opposed to 4 hours in the present study, and there is reason to suspect that different relationships hold at different levels of drive, (b) different stimuli were used, and it has been indicated that such differences can account for reliable results in opposite directions, (c) Atkinson and McClelland knew which groups the records belonged to while scoring them, and it is possible that unconscious bias entered, and (d) Ss in the Atkinson and McClelland study had reason to suspect the study was food-related.

The three weighted scores investigated all approached or reached significance when picture-pull was taken into account, and all had relatively high reliability coefficients. Apparently, if a dimension is carefully defined, weighted scores involving inference and global judgment need not be overly subjective. In regard to the hunger drive, the present study suggests that the Murray type score is superior to the Atkinson and McClelland type score, but further work is indicated before this conclusion can be generally accepted. The weighted score that most reliably separated the groups was one based upon the assumption that the story teller directly projected his need state unto the heroes of his stories. It should be possible in the future, by investigating hunger at various levels and working with known stimulus dimensions, to develop more meaningful generalizations about response characteristics.

Implications for TAT interpretation

To the extent that the results and

theoretical formulations of the present study can be generalized to other needs and intensities, the following generalizations for interpreting TATs are indicated:

(1) Drive states are associated with a heightening of the generalization gradient which results in increased need-related responses to pictures which are relatively low in need-relevance. The stronger the drive, the weaker are the stimulus cues necessary to elicit drive-related responses.

(2) Drive states are associated with inhibitory reactions. Inhibition applies most strongly to strong stimulus cues, to strong drives states, and to strong latent responses. From this it follows that (a) weak need-related responses are more apt to gain expression than strong ones, and (b) the stronger the drive, the weaker are the stimulus-cues necessary to elicit defensive reactions.

(3) The inhibitory gradient, as a function of need-relevant cues, is steeper than the expressive gradient. From this it follows that when the drive is strong it will tend to gain expression in a weak or disguised manner and be elicited by relatively remote stimulus situations. To highly need-relevant stimuli, defensive reactions, predominantly of a constricted type, can be anticipated.

(4) It is important to take into account the need-relevance of the picture to which a response is made. Indiscriminate totalling of scores can result in a cancelling-out process. In this respect, Lazarus states, "For any particular need variable like aggression, succorance, achievement, etc., the use of a well-worked-out stimulus dimension of ambiguity could lead to the more accurate specification of the strength of a need and the nature of the ego-defense process" (7, p. 445).

It goes without saying that the above generalizations are based upon a state of moderate drive and one that is not socially restricted. For stronger drive states and ones that arouse great-

er inhibition, unstable equilibria between expressive and inhibitory tendencies can be expected. Consequently, an oscillation between the two tendencies can be anticipated on occasion. The senior author recently experienced an example of such a process. Judging by a patient's frequent hostile comments in psychotherapy about older women, it seemed likely that she was displacing feelings toward her mother, whom she described in a stereotyped idealized fashion. On the TAT she made only positive comments about mother-figures, but it was noted her stories were unduly short. Finally, on the last picture, a picture of one woman choking another (TAT 18 GF), she began to tell a story about a daughter choking her mother because the latter would not give her freedom, then added: "I can't imagine a child doing this to a mother. Can I change it? . . . The mother fainted and the daughter grabbed her just in time — just trying to hold her. The mother had a heart attack."

SUMMARY

The present study involved an investigation of the hunger drive as related to thematic apperception. A control group ($N=32$) and a hungry group ($N=20$) were obtained by testing the former after lunch and the latter before dinner. Neither group had reason to suspect the study was related to hunger. A specially designed test of thematic apperception, and a questionnaire on hunger were administered. The major findings and conclusions are summarized below:

1. The hungry and control groups did not differ in overall food-imagery. When all pictures were combined, the only score that significantly differentiated the groups was one in which food or hunger was incidental to the plot.

2. The necessity of working with known stimulus dimensions was indicated. When pictures were divided according to "picture-pull," it was

found that the hungry group, relative to the control group, gave more hunger-related responses to low picture-pull, fewer such responses to high picture-pull, and did not respond differentially to moderate picture-pull. This finding was interpreted as an indication that an inhibitory "realistic" process was operating alongside an autistic process, and could be explained by an adaptation of Miller's gradients of displacement to projective techniques.

3. Inhibition was found to relate to response-produced cues as well as to stimulus-produced cues. It was concluded that inhibition is a function of need-relevant cues from three sources, the stimulus, the latent response, and the drive-state itself.

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A Study of Reliability in Human Figure Drawings

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Psychologists will admit that knowledge of the nature or structure of any projective technique will cause the subject either openly or covertly to distort or alter his productions to some degree. It would seem at first glance that figure drawings are among the most mutable or controllable of psychological measures. While they tend to be more direct and less subject to deliberate disguise than verbal communications (6) there is ample opportunity for omission and substitution of significant elements.

It has been said that particular skills in draftsmanship or artistic talents might obscure or diminish aspects of a drawing which would otherwise reveal significant aspects of personality. Whitney (9) found, however, that the proficiency of drawings as evaluated by art experts did not relate to his dichotomy of psychiatric patients versus "normal" subjects.

Workers in the field agree almost universally that drawings depict the "body image and the self image" (1, 8), that fundamental personality traits as they are reflected in Human Figure Drawings do not vary appreciably (3, 4, 7), and that important changes such as aging contribute to the basic structure of personality and are reflected in recognizable elements of the drawings (5).

The purpose of this study was to evaluate the effect on the drawings of a group of graduate students invoked by a systematic revelation of the possible negative interpretations which might be inferred from distortions, omissions, and other imperfections present in their productions.

METHODOLOGY

Twenty-three graduate students

(twelve men, eleven women) in the School of Education at New York University were asked to draw a picture of a person on a piece of white paper, eight and one-half by eleven inches, with a number two pencil. None of these students had had any previous instruction or readings relative to the interpretations of human figure drawings. Following this, the students were given a two-hour lecture on the interpretations of human figure drawings. Each of the fifty-nine items used in the Steinman Manual¹ were touched upon and each element was described primarily in terms of its negative attributes. Thus a distorted elongated nose was interpreted as an attempt to compensate for phallic insufficiency, and an open mouth a sign of immature dependency needs, etc. Needless to say, the drawings were represented as an infinitely revealing device which appeared to expose the worst aspects of any individual's personality. Thereafter the students were asked to make another drawing in the manner previously described.

Each drawing was scored by the Steinman Manual and the means of the two sets of drawings were evaluated by "t" test. The difference between the means 2.1 and 2.2 respectively was found to be insignificant; "t" being .59 and "p" being almost exactly 50%. An array of subscores for each figure drawing was made and

¹ The Steinman Manual fixes by a method of factor analysis numerical values to various portions of a drawing and other values to relationships between various areas. A more complete explanation of the technique by which values were assigned and the evaluation of reliability and validity were accomplished is presented in Steinman's original work (8) and some further studies by the author (2).

those components which illustrated significant deviations in the "before" series were compared with the corresponding components in the "after" series. Six subjects out of twenty-three made no changes in their second production. In sixteen of the twenty-three cases there were only two changes in the fifty-nine scorable components.

Correlation between the paired groups yielded a Pearson "r" of .71, "t" being equal here to 3.33 and "p" equal to better than .01. In the five cases where many changes were made, there was no instance in which the individual score went down. In most cases it rose significantly.

SUMMARY AND CONCLUSIONS

An attempt was made to demonstrate the reliability of the Human Figure Drawings with 23 subjects who had been exposed to the possible negative implications of interpretations which might be drawn from their production. It was found:

a. That the majority of the subjects made little or no change in their second figure drawings after being enlightened as to the negative implications which might have been drawn from their first productions.

b. In those instances where radical changes were attempted, no subject was able to "improve" his production.

c. Evaluated as a group, the means of the "before" and "after" drawings were shown to be statistically identical, and the correlation of paired drawings demonstrated a positive re-

lationship significant at better than the 1% level of significance.

In view of these findings, it seems safe to conclude that the Human Figure Drawings continued to reflect a consistent picture of the self-image, despite attempts on the part of subjects to disguise or conceal what they knew or imagined to be significant details relative to weaknesses in their own personalities.

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A Study of Ego Integration by Means of an Index of Identification Derived from Six TAT Cards

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In this paper we shall examine one of the problems which are important from the point of view of both personality theory and projective psychology, namely the problem of ego integration. More specifically we shall be concerned with the hypotheses concerning ego development as advanced by Melanie Klein, who is responsible for some of the latest developments in psychoanalytic theory.⁽¹⁰⁾ It is the author's opinion that Klein, by extending the use of psychoanalysis to childhood disorders and the psychoses, is especially competent to answer questions concerning the development and integration of the ego. Klein⁽⁸⁾ believes that the earliest basis of the ego is the formation of 'good' and 'bad' internal objects. By this she means that the infant perceives the mother at first as 'good' when she satisfies its needs, and 'bad' when she fails to do so. On the basis of this primitive perception it builds up two separate imagoes or emotionally charged memory systems with which it identifies, and which form the basis of the ego. At a later stage the two internal objects fuse and the outcome is depression, for the child feels that it has lost the fantastically overidealized 'good' mother figure. Yet this fusion represents a most important step in ego development, and upon its successful completion depends, according to Klein, whether the person will later on be likely to develop schizophrenic or paranoid tendencies.

This mechanism of splitting (as the organizing of the pleasant and the unpleasant experiences about the same persons into separate imagoes is called) is repeated at several stages of

development. Consequently the father as well as the mother figure are split according to both instinctual and moral criteria. In Klein's view, ego development and consequently psychological health depend upon the degree to which the individual has succeeded in integrating into a single structure the various introjects or internalized objects that he has incorporated in the course of his psychological development.

This will depend on the number of internalized 'bad' objects, or in environmental terms upon the number of significant situations in the person's life experience where the parents were cruel, frustrating and restrictive, or where they have violated the moral values which the child had already acquired. Identification with such objects would imply feelings of being 'bad', worthless, and since aggression from either the id or the super-ego is directed towards such objects, it arouses anxiety and guilt. Also, since the original relations upon which the internalized object is modelled were primarily instinctual in character, such a 'bad' object is also identified with the instinct.

When a person has incorporated only a limited number of 'bad' objects, and even these are not excessively 'bad' because of the relatively moderate degree of frustration that preceded the introjection, they fuse with the 'good' objects to create an ego modelled on a realistic conception of the parents. Such an internal object results in an identification which is neither too idealistic, nor too aggressive, and which consequently, tends to preserve its integrity even in an anxiety situation, i.e. the person will not abandon his dominant identifi-

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cation even in the face of frustration or danger. On the other hand, a less well integrated individual will be inclined to use his least anxiety-evoking introjects in a stress situation, i.e. he defends himself by means of the mechanism of identification. This may take the form of identifying with an introject which has not been incorporated in the ego structure, the cathecting of which thus creates confusion and a feeling of losing one's identity.

It is recognized that all people use this mechanism to some extent. It only becomes pathological when it is the person's major mode of defence or when the objects identified with are too distant from what the individual can expect in reality. In such a case a basic disunity in the ego is implied, either due to a conflict concerning masculinity-femininity as in the obsessive-compulsive neuroses, or splitting, i.e. organizing of all experiences into a 'good' or loving and moral, and a 'bad' or frustrating and immoral imago, as in the psychoses. The conscious or unconscious form of the introject might be modelled on the over-idealized or debased form of one parent or the other, and is often disguised, especially in the psychoses as a famous person or superhuman being by means of symbolic equations, but at its basis it is always a much feared parent of the opposite sex. This may be the result of actual difficulties during the Oedipal stage, or because the conflicts built up during the preceding stage have been displaced on to the Oedipus complex. This does not imply that the subject becomes consciously or unconsciously homosexual. It will be recalled that the mechanism of introjection is based on the oral component instinct and its excessive use presupposes a pregenital orientation. But it does imply the presence of a number of internalized 'bad' objects incorporated at various stages of development. For this reason one expects to find this mechanism only to a very minor degree in hysteria, more

so in obsessive-compulsive neurosis and the related disorders of neurasthenia and psychosomatic complaints, and even more so in the functional psychoses where it is the major mode of defense together with the allied mechanism of projection and introjection and their various combined uses. (10)

METHOD

More simply, the hypothesis of this study may be stated thus: that the deeper and more serious the disorder, the fewer will be the situations in which the subject identifies with the parents of his own sex. The question remains as to how this can be measured. It is well known that there are several cards in the T.A.T. which give an opportunity to the subject to identify with the person of either sex. The author's clinical experience suggests that there are six cards which behave particularly in this manner. They are 3 BM, 4, 6 GF, 12M, 13 MF and 18 GF. Of these six cards three, namely 3 BM, 12 M and 18 GF have been described by Rapaport (13) as sexually ambiguous, i.e. it is possible for the subject to perceive one of them as either a man or a woman. The other three cards all contain both a male and a female figure and it remains with the subject to identify with one of them.

After administration each card (story) is scored as male (M), female (F), or ambiguous (?) identifications. The scoring is simple in the case of 3 BM, 12 M and 18 GF, where a male or a female score is given if the ambiguous figure is perceived as either a man or a woman, and the score is ambiguous (?) if the subject fails to decide, either verbalizing his inability to identify the sex of the figure, or avoiding the issue by calling it a "person" or "figure." The scoring is slightly more complex in case of cards 4, 6 GF and 13 MF. A male or a female score is given if (a) the story starts with taking the viewpoint of one of the figures and at least half of the

total verbalization (as measured by counting words) pertains to the actions, feelings or thoughts of this figure or describes it in any way, or (b) if more than half of the verbalization pertains to the actions, feelings, or thoughts of this figure, or describes it in any way, even though the story started off by taking the viewpoint of the other figure. If both of these criteria fail the score is 2, or ambiguous.

The final score which we shall call Ego Integration Score, (E.I.S.) from now on, is obtained by adding up the number of stories (cards) which receive a score for identification with the subject's own sex. The number of stories in which the subject identifies with the opposite sex give another score, and the number of confused identifications yields a third score. The latter would be theoretically expected to indicate the degree to which the subject's unconscious ego structure contains 'bad' objects, for it shows an inability to identify.

A remark about the way the test is to be administered is relevant to this point, for there are several widespread methods of administration. The original Murray procedure with its psychoanalytical atmosphere (12) and the method adopted by Rapaport (13) with its emphasis on inquiry are perhaps the two best known methods and suggestions have been adopted from both of them. In our practice the T.A.T. is administered only in the second or third testing session after the subject has been given intelligence tests and a Rorschach. Ten cards are given each subject: 1, 3 BM, 4, 6 GF, 6 BM (males) or 7 GF (females), 8 BM, 9 GF, 12 M, 13 MF and 18 GF in the order given. The subject is given the Murray instructions with the following addition: "I hope you will do well." At this point Card 1 is presented. The examiner refrains from saying anything from this point on. If the subject asks anything his answer is "It is your story." He also refrains from questioning. If the story is short, however, he keeps

looking expectantly at the subject and may remark after a while "I think you can do better than this." If after some very short stories the subject produces a longer one the examiner praises him. This procedure is anxiety-arousing and since both neurotics and psychotics find the T.A.T. difficult, it may be thought of as frustrating. But it does not seem to interfere with satisfactory administration, for in the present study only one of forty-five disturbed subjects refused one of the cards altogether.

The next problem is to select some suitable outside criteria for estimating ego-strength. Two separate criteria were selected. One of them was to place the subject on the continuum: hysteria (conversion or anxiety) obsessive-compulsive neurosis (or neurasthenia or psychosomatic complaints) paranoid conditions including delusions and dominant personality traits, manic-depressive conditions, and finally, schizoid personality or psychosis. To place the subject in any of these categories the diagnoses of a psychiatrist and two clinical psychologists were used, one of them the author, who diagnosed the case independently. A person was included in the category if at least two of the three diagnosticians agreed as to the disorder. In 68 per cent of the cases all three of the diagnosticians agreed, and there was agreement in the remaining 32 per cent between two of them. The complaints, symptoms, problems of each patient were collected from all available interview records taken about the patients, and these were to be placed on the ego integration scale derived from the T.A.T. as another criterion of ego integration, with the prediction that the more disturbing symptoms would concentrate at the low values of the scale.

That such a scale of disorders and symptoms could be regarded as a measure of ego integration follows from its definition. It is said that ego integration decreases as we go from the less severe neuroses, notably

anxiety neurosis and hysteria, through obsessive-compulsive neurosis where there is already some pathological distortion of the ego, to the functional psychoses. This is generally explained by saying that this scale of disorders corresponds to a scale of fixations at increasingly earlier levels of development. Such fixations are said to result in cessation of development and consequent immaturity (4) Behaviourally ego integration is defined as self control, adequate reality testing, an ability to postpone satisfaction, lack of irrational inhibitions and fears. It also means sexual maturity, i.e. the establishment of heterosexual love as the only form of sexual expression. Lack of childish emotional dependence is also to be counted here. But the theory that the scale of disorders ranging from hysteria to schizophrenia represents a decreasing scale of ego development and emotional maturity is not solely dependent on the hypotheses of psychoanalytical theory. In the psychoses sexual immaturity, poor reality testing and a complete lack of adequate self-control are the most obvious features. In obsessive-compulsive neurosis reality testing is reasonably good, but gross lack of self-control and sexual immaturity are apparent. In hysteria both self-control and sexual maturity are considerably better, but emotional lability, irrational inhibitions and lack of insight still indicate a certain degree of ego weakness.

SAMPLE AND PROCEDURE

The sample includes 25 male and 20 female patients who attended the Observatory Psychiatric Clinic in Melbourne between May 1 and October 31, 1955, and who were tested by either of two psychologists.²

² I wish to take this opportunity to express my gratitude to my colleague, Miss Jocelyn Paynter, for helping me obtain the data and for a criticism of the rough draft of the text, and to Mr. H. Esson, senior psychologist, who was to go through the data and give the third diagnosis in the cases tested by the author.

The sample was taken in order of referral, and all patients above eleven years of age were included. Each patient was seen by a psychiatrist, and one of two psychologists, who administered an intelligence test (Shipley-Hartford or Wechsler-Bellevue), the Rorschach as well as the ten T.A.T. cards listed in the previous section. This testing constituted the routine diagnostic testing performed by the two psychologists, and in some cases it was supplemented by other tests, if it was felt necessary.

In analyzing the data for each case first the diagnostic classification was determined, then the interview data obtained by the psychiatrist, the psychologist and the social worker, where applicable, was analyzed for symptoms, problems and complaints which the patient presented. The three T.A.T. indices were then calculated. From the Rorschach two separate indices were obtained, (a) the Wheeler signs (15) of male homosexuality multiplied by a hundred and divided by R, as suggested by Aronson (1). This was obtained from the 25 male subjects. (b) the "T" score or tension index developed by Lyle (11) was calculated for each subject.³

We shall now turn to some descriptive data concerning the characteristics of the sample. It was found that the subjects as a whole were younger than the average age for the adult population (11 plus), and that they were on the average ten points of I.Q. above the population mean. Their socio-economic status ranged from

³ This is a measure of emotional control based on the ratio of F dominant and non-F dominant determinants weighted in the following way: F receives a weight of 1.5, all the F dominant determinants like M and FC a weight of 1.0 for control and a weight of .5 for discharge, and all the non-F dominant determinants a weight of .5 for control and a weight of 1.0 for discharge; determinants like C or C', which have no F component receive a weight of 1.5 for discharge only. If "T" is below 3.0, uncontrolled, antisocial behavior is to be expected, especially in adolescents. If "T" is more than 9.0, one expects neurotic symptoms.

labourer to junior executive, but the great majority lay in the tradesman, shopkeeper, and clerk category. This means that the sample shows a bias toward the lower middle class group, having much less representation from the lower class and none from the upper class. This is necessarily so with every group of people attending a government psychiatric clinic, for only a very few lower class people seek psychiatric help and these tend to be of above average intelligence, while people of the high income groups tend to consult private practitioners.

The question arises whether this biased sampling would interfere with the results of this study. The correlations of I.Q. with the other variables is presented in Table II and it appears that I.Q. correlates significantly only with "Q" and "T." Since no major conclusions are based on either of these scores, it seems safe to disregard the bias introduced by I.Q. at least. The only significant correlation of age was with I.Q. (r_1 equals .55) which again does not seem to influence the data concerning the central hypothesis of this study. The influence which the restriction of the socioeconomic status would have on the data is hard to predict, but again it would be hard to argue that it would have any specific influence at this stage of our knowledge. Within the range given inspection failed to show any noticeable trend in this respect.

RESULTS AND DISCUSSION

It is apparent from what has been said so far that the success of this method is dependent on the assumption that the identifications for each card are primarily determined by the subject's personality structure and not the stimulus characteristics of the T.A.T. cards to which he makes up his stories. Considering its importance it seems to be worth while to check this assumption empirically. This has been done in the following way: It was assumed that for the whole sample the male and the female iden-

tification for each card should be about the same. This is not an unreasonable assumption if the stimulus value of the cards did not determine identification at all, for the sample consisted of roughly the same number of males and females and the personality disturbances of the subjects were of roughly the same degree. For this reason any statistically significant deviation from this expected distribution of identifications could be considered proof for a bias introduced by the card's stimulus characteristics. This assumption was tested for each card by obtaining the chi-square values for the deviations from the expected frequency. (see Table I)

TABLE I. Significance of Chi-Square
Concerning Two Aspects of Six
T.A.T. Cards

Card	Sex Bias	Discrimination
3 BM.....	N.S.	.01
4	N.S.	.01
6 GF.....	N.S.	N.S.
12 M.....	.001	.05
13 MF.....	.001	N.S.
18 GF.....	.001	N.S.

The chi-square values obtained were found to be non-significant for card 3 BM, 4 and 6 GF. However the chi square values were found to be significant (.001) for 12 M, 13 MF and 18 GF. In case of 12 M and 13 MF the deviation was in the direction of a preponderance of masculine identifications, and in case of 18 GF a significantly greater number of feminine identifications were observed.

This would have thrown some unfavourable light on the usefulness of half the cards except for the fact that tabulation has shown that in cases of all the cards there is a tendency for same-sex identifications to decrease from neurotics to psychotics. The significance of this trend was tested by chi-square for each card, and in case of three cards, 3 BM, 4 and 12 M the trend was found to be significant. Since there is some discrepancy between this and the previous

TABLE II. Table of Intercorrelations (N equals 45).

	Diag.	I.Q.	"T"	E.I.S.*	O.S.I.S.**	"?"†
Diagnosis.....35	-.10	-.88***	.50	.58*
I.Q.....	-.71**	-.36	.05	.58*
"T".....30	.35	-.66*
E.I.S.....	-.52*	-.55*
O.S.I.S.....	-.72***

* Ego Integration Score.

** Opposite Sex Identification Score.

† Confused Identification.

set of chi-square values (6 GF was unbiased, yet it fails to discriminate significantly, yet the biased 12 M showed significant discriminatory power) it was felt that one could proceed with the rest of the analysis provided one kept in mind the weaknesses of the method. Ideally three new cards should have to be designed and standardized in such a way that no sex bias in terms of stimulus value could be demonstrated. On the other hand the amount of work involved might not be justified if the basic hypothesis turned out to be incorrect. It seemed to be much more reasonable to carry on with the investigation, using the imperfect method, and if the hypothesis could be demonstrated to be correct in spite of this methodological weakness, it might be judged worth while later on to perfect the method for practical clinical use. The more so as some sort of relationship was suggested by the data between failure to discriminate and sex bias of the stimulus material.

The nature of this study made it desirable to correlate each variable with every other variable in order to assess the statistical reliability of the results. It was also felt that with the kind of measures employed the use of the product moment correlation coefficient would have been highly questionable, since equality of units could not be assumed and most of the variables yielded only four or five class intervals. For this reason it was decided that the scattergrams should be reduced to two-by-two tables and the tetrachoric correlation coefficient obtained using Hogan's Nomograph (7). The statistical significance of the

correlations was to be obtained by computing chi-square from the same four-fold tables. The correlations thus obtained are presented in Table II.

Among these correlation coefficients the one which has the most interest for us is that between E.I.S. and the severity of disorder. We find it to be $-.88$ and it is significant at the .001 level of confidence. Because of its great theoretical interest the scattergram is presented in full. (See Table III.)

This finding seems to support our initial hypothesis that with an increasing degree of ego integration one could expect an increasing number of situations in which an identification with objects of the individual's own sex is assumed. Against the validity of this finding two main objections could be raised. (a) It could be objected that the diagnostic classifications used may not correspond to the characteristics which are connected with them according to psychoanalytic theory, and which formed ultimately our validating criterion of ego integration. This objection shall be answered by presenting the actual symptoms which seem to be empirically correlated with various E.I.S. values. If thus arranged

TABLE III. Scattergram Showing the Relationship Between E.I.S. and Severity of Disorder.

	E.I.S.*				
	1	2	3	4	5
Schizophrenia.....	1	7	..	..	..
Paranoia.....	..	3	11	..	..
Depression.....	..	1	1	..	..
Obsessive-Compulsive...	..	1	5	1	..
Hysteria.....	3	7	4

* Ego Integration Score.

they do represent a scale of increasing reality-testing, sexual maturity and self-control, the objection can be regarded as pointless. (b) The other objection which may be raised is that lack of identification in stressful situations with objects of one's own sex may be a sign of sexual maladjustment or homosexual tendencies, rather than lack of ego integration. Such an assumption would be supported by the observation made by some psychoanalysts (8) that there is an increasing degree of homosexual tendency as the disorder increases in severity.

This objection could be dealt with separately, by presenting data which makes such explanation of the results unlikely.

In order to deal with the first objection discussed in the previous paragraph, it seems desirable at this point to consider the symptoms presented, in order of their mean E.I.S. weighting. The weighting was obtained by taking the E.I.S. of each patient in whose case the particular symptom

had occurred, and then dividing this sum by the number of patients who happened to have the symptom. As the symptomatic picture of the men and women was different it was decided to present the symptoms of the men and the women separately. In Tables IV and V natural divisions found in the scale are marked by spaces left between the groups.

Inspection of the tables show that the results seem to correspond closely to the progression of increasingly serious symptoms as understood by psychoanalytic nosology. It should be noted that confusion, delusions and perversions are restricted to low E.I.S. values, while at the upper end we find signs of general "nervousness" in the men and frank hysterical symptoms in the women. For this reason it can be said that the objection that the diagnostic classifications did not cover the characteristics imputed to them by analytical theory does not hold, and therefore the scale of disorders can be regarded as a valid measure of ego integration.

TABLE IV. Symptoms of the Male Subjects Arranged in Order of Mean E.I.S. Weights

Mean E.I.S.	Symptoms
1.5 — 2.0	is afraid when meeting strangers confused at times suicidal partially impotent perverted (anal perversions and pedophilia)
2.1 — 2.5	has delusions of persecution feels that people are looking at him is apathetic drinks heavily
2.6 — 2.9	is suspicious cannot fit into any job had homosexual experiences steals
3.0 — 3.5	is afraid of becoming homosexual has headaches cannot mix with women has tight throat, asthma, chronic bronchitis is afraid of the consequences of masturbation is afraid of robbers
3.6 — 4.0	is enuretic cannot concentrate on his studies has temper tantrums is very tense shy, cannot mix with people cannot read, write or spell

TABLE V. Symptoms of Female Subjects Arranged in Order of Mean E.I.S. Weights

Mean E.I.S.	Symptoms
2.0	is rebellious confused at times cannot concentrate on studies is perverted (pedophilia) is apathetic
2.1 - 2.5	does not keep her body and clothes clean cannot mix with people, very shy is promiscuous is suicidal suffers from insomnia cannot fit into any job has phobias depressed at times has delusions of persecution has obsessions feels that people are looking at her stays in bed or behind locked doors for days
3.0	sexually insatiable is a perfectionist suspicious
4.0	is frigid stutters breaks things when angry has all sorts of pains and aches has tight throat, asthma, chronic bronchitis
4.5	blushes and flushes all the time

We shall now examine the relationship between the various types of identification and sexual maladjustment in general and homosexuality in particular. It will be recalled that theoretically no definite relationship is to be expected between identifications with persons of the opposite sex and homosexuality. This is so because identification as a defence in an anxiety-arousing situation is based on the oral instinct. In order to decide the validity of this hypothesis we shall examine the relationship of the various kinds of identification with two indices of sexual maladjustment, the Wheeler index of male homosexuality, as described above, and overt symptoms of sexual maladjustment as reported to the psychiatrist or the psychologist by the subject. Since the Wheeler Index is applicable only to

men, this part of the discussion will be restricted to the 25 male subjects.

To obtain the index of overt sexual maladjustment the 25 male subjects were divided into two groups: the first group consisted of those who reported symptoms of overt sexual maladjustment and the second group consisted of those who did not. The symptoms form part of the collection of symptoms as reported in Table IV. They are: partial impotence, anal perversion, paedophilia, homosexual experiences, fear of becoming homosexual, inability to mix with women and fear of the consequences of masturbation. If the subject reported one or more of the above symptoms, he was included in the sexually maladjusted group.

It was found (see Table VI) that both the Wheeler Index and overt

TABLE VI. Table of Intercorrelations (N equals 25)

	Diag.	I.Q.	"T"	E.I.S.	O.S.I.S.	"?"	W.I.
Wheeler Index.....	.65*	.00	-.55	-.55	.48	.40	---
Sex Maladjustment.....	.68*	-.52	-.10	-.68*	-.28	-.12	.75*

symptoms of maladjustment have a significant (3) relationship to severity of disorder, the tetrachoric " r " being .65 and .68, respectively, and that the E.I.S. correlated negatively with sexual maladjustment (r , equals $-.68$), but that there was no significant relationship between E.I.S. and the Wheeler Index. This was so in spite of the fact that the Wheeler index correlated to the extent of .75 with sexual maladjustment. Neither of these indices of sexual deviation were found to have significant relationships with opposite sex identifications and ambiguous identifications in the T.A.T.

These findings seem to be consistent with the hypothesis that all forms of sexual maladjustment increase in number as the psychopathology increases in severity, but that this is by no means restricted to homosexuality. It also becomes apparent that these various forms of sexual maladjustment are associated with a lack of adequate father identification rather than feminine identification or a projective tendency. It is a lack of ego integration which seems to account for sexual deviations rather than identification with the opposite sex. This finding can be regarded as evidence against the second objection raised against the E.I.S. as the measure of ego integration, and this means that the results of this study are consistent with Klein's theory of ego development.

The opposite sex identification did not seem to correlate with anything outside the other identification indices, and even these correlations cannot be taken seriously for the scores involved are not statistically independent of each other. The ambiguous identifications, however, showed strong relationships with a number of variables (see Table II). They correlated positively with severity of disorders and I.Q., and negatively with "T," the latter it will be recalled as measuring the repressive type of emotional control. All this would make it

likely that the ambiguous identifications are a measure of a projective tendency, which is what one would have expected.

A careful inspection of the scattergram showing the relationship of E.I.S. and severity of disorder (Table III) indicates that there seem to be three distinct groups in terms of ego integration. The three categories are: (a) schizophrenia, (b) paranoia, depression and obsessive-compulsive neurosis and (c) hysteria. Statistical analysis confirms this impression, the exact test developed by Federighi (3) indicates a significant difference between paranoia and schizophrenia in terms of E.I.S., the cut-off point being between two and three; and a similar difference is found between obsessive-compulsive neurosis and hysteria, the cut-off point being between three and four. No difference could be detected between paranoia, depression and obsessive-compulsive neurosis.

This would indicate three main categories of psychopathological conditions in terms of ego integration. Such a finding which would indicate an essential similarity between paranoia, depression and obsessive-compulsive neurosis is very much against the classifications given in the conventional text books of abnormal psychology and psychoanalysis, but it seems to support the general clinical observation that in terms of projective test results it is often impossible to differentiate among these disorders. My attention was first drawn to this fact by Mr. H. Esson in connection with the Rorschach test, and while it is not so true when the T.A.T. is used according to the free analytical method of interpretation, there are many instances where it is difficult to differentiate between the fully developed obsessional neurosis and an early paranoia even with the T.A.T., which seems to show an essentially paranoid pattern in both instances. So far as the writer knows the suggestion to reclassify psychopathological condi-

tions in terms of test signs was first made by Tomkins (14), but few actual attempts have been made. Perhaps Becks' recent attempt (2) is the most significant in this respect. It is yet too early to say just how successful such attempts will be but the results here given might give some food for thought for those who are interested in this line of research. This is especially true if one considers the uncertainty in this region since Aronson (1) published his study concerning the etiology of paranoia, and Grauer (6) in reply has shown that Aronson's results, and consequently Freud's theory applies only to a special group of cases.

SUMMARY AND CONCLUSION

A study is reported above in which a psychoanalytical hypothesis was chosen for verification, which the author had previously used in interpreting the T.A.T. in a clinical setting. This hypothesis was originally advanced by Melanie Klein and it postulates a relationship between the kind of objects introjected and their degree of fusion as a basis for ego integration. According to this hypothesis a stable ego structure implies the fusion of a number of introjected objects which are of the same sex as the individual, and which determine the sort of response he is likely to adopt in a variety of situations. Thus when a person with a poorly integrated ego is placed in a stress situation, he will either identify with a person of the opposite sex or will become anxious and confused. The deeper the psychosexual fixation upon which the subject's personality disorder is based, the less well integrated his ego will be, and, consequently, the fewer the situations in which he will identify with a person (parent figure) of his or her own sex. Ego integration is generally defined as adequate reality-testing, self-control and sexual maturity, the latter being judged by the primacy of heterosexual love over all

other forms of sexual expression. In addition any serious personality disorder should be absent if the ego is strong.

In order to test this hypothesis some measure of the number of adequate sex identifications and ego strength is required. The kinds of identifications in this study were measured by six T.A.T. cards, which allow the subject to identify with a figure of his or her own sex, but which also allows the subject not to do so. Ego strength was measured by a scale of personality disorders and a list of symptoms collected about the subjects.

It was found that there is a strong relationship between the number of same sex identifications in the T.A.T. and an increasing degree of ego integration. Thus the subject with the low number of adequate sex identifications tended to get diagnoses for more severe disorders, and they had at the same time symptoms which suggested poor ego integration. This was interpreted as evidence for Klein's theory.

The possible objection was raised that this lack of same sex identifications indicates sexual maladjustment or homosexuality, and this is what really accounts for the results. An examination of the empirical findings, however, discounted this alternative explanation.

In conclusion it can be said that the results tend to support the hypotheses advanced, even though the evidence has a direct bearing only on the deductions made from the theory, for in a cross-sectional study like this the actual development of the mechanisms cannot be studied. It was also felt that even though the methods used were sufficiently efficient for the type of work here reported, they could be improved further for clinical use by following some of the hints derived from the results of this study.

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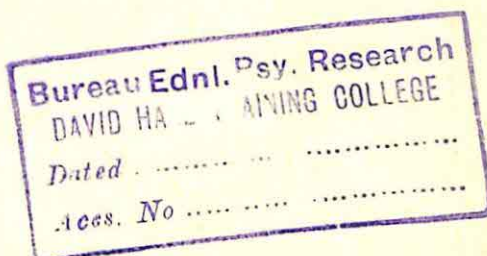
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Two Dimensions of Test Structure in Rorschach-like Projective Tests¹

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Although much has been written about the dichotomy of structured vs unstructured tests, or of objective vs projective tests, no serious attempts have been made to provide quantified dimensions of test structure. This paper seeks to demonstrate a method by which such dimensions can be established for projective, semi-projective and non-projective visual tests. Two such dimensions are presented to illustrate their potential value in assessment of test structure.

The overall design of the study, of which this paper is only a part, involved (A) the development of four projective tests somewhat similar to Rorschach, but each differing as to materials and/or mode of presentation utilized, and (B) development of operational measures which would yield *values* assessing the nature of the stimuli in the four respective tests, and also yield *scores* assessing the individuals taking the tests. Elsewhere (5), the writer has reported on the data indicating which aspects of the Ss' behavior are consistent in the four test situations. In this paper we shall discuss the assessment of the test structure of these four tests.

Two aspects of "verbal responses to visual stimuli" were taken as operational means of indicating what is meant here by "test structure." They are (A) the frequency of responses to discrete stimuli in each test, and (B) range of concepts contained in such responses. The precise steps taken to achieve quantified variables are discussed below. It should be noted here that while only two measures are currently used to define test structure, it is hoped that several others will be

developed in future research to specify further the meaning of this term.

METHOD

Design

The general design of this study involved development of two values to assess test structure, the measurement of each in four different tests, their intra-test correlation, graphic representation of the distributions of these values on each test for visual inspection, and further statistical analysis of the data to assess the utility of the methodology employed.

Tests Employed

(1) The Modified Rorschach and (2) The Modified Behn-Rorschach tests are adaptations of the two standard series. Each ink blot plate was photographed in the regular sequence on a 35mm color film strip. Every film frame was then projected onto a screen for seven seconds. Standard instructions were employed, with the exception that the Ss were informed as to the length of the exposure time. Inquiry was conducted in the regular manner with standard Rorschach and Behn-Rorschach plates. Only one response per stimulus area was recorded and scored for each S. Whenever S gave more than one response per stimulus, E forced S to indicate which response S considered "better," and only that response was scored. "Better" was never explicitly defined for S. Beck's (1) Rorschach Charts and Rosenwald's (6) Behn-Rorschach charts were used to locate consistently the stimulus areas to which responses were given.

(3) The Picture Title Test consists of 102 photographs of a wide topical variety which were reproduced on a 35mm film strip and each projected onto a screen for seven-tenths of a

¹ This paper was presented in part at the Western Psychological Association Meetings at Seattle, Washington in June, 1953.

second. Each S was instructed to give a title to each picture, if he could, and to tell what aspects or qualities of the picture suggested the title to him.

(4) The Object Recognition Test consists of sixty objects each mounted on a separate tray and which were singly exposed in a Viewing Box for eleven-hundredths of a second. The S was instructed to tell what he saw in the box. Again—in these latter two tests, only one response per stimulus was scored.

Test Equipment

A special tachistoscopic timer was designed for this experiment. This instrument was used with a modified Whitco projector for presentation of the Modified Rorschach, Modified Behn-Rorschach and Picture Title Test, and used with an Object Viewing Box for the presentation of the test material in the Object Recognition Test.

Experimental Design

The four tests described above were individually administered to 48 female VA employees who volunteered to participate in this study. The serial order in which these tests was presented to each of the Ss was based on the random assignment of one of eight sequences of presentation to each subject. The eight orders were based on two Bulgeski's Systematic Latin Squares, which insured that each test would equally precede the other tests. The instructions to each test were read to each subject.

Scoring of the Protocols

The data for all tests were first evaluated to determine the *Basic Percept* of each response. Basic Percept was defined for this study as, "The central percept verbalized by the S which indicated the nature, meaning, order and/or the class of object or objects seen by him." The exact titles given by the Ss in response to the photographs presented in the Picture Title Test were assumed to be the

Basic Percepts of the Ss' responses to those stimuli. A formal set of rules was carefully followed to categorize and combine the Basic Percepts of each stimulus on the various tests so that norms could be established for each. These stimuli were then given values based on the two dimensions discussed below:

(1) Selection Variable Value (SV value). This dimension may be conceived as a measure of "stimulus impact" or "stimulus demand" of a test stimulus. An SV value was determined for each stimulus or stimulus area on the four tests by establishing the proportion of the Ss giving scorable responses to it. We were not concerned here with the content of the responses given. We merely wished to know whether, for example, 50%, 250%, or 80% of the Ss responded to a given stimulus.

For example, 63% of these Ss responded to Rorschach Card III D1 and D7 areas combined (two men lifting a pot) when that card was exposed under special experimental conditions. Only eight per cent of these Ss responded to D1 Card II (head of bears) and finally, when a picture of the Statue of Liberty was exposed for .7 seconds, 98% of the Ss responded to it.

(2) Percept Variation Value (PV value). This dimension can be conceived as estimating the "conceptual range" or range of interpretations in responses given to visual stimuli. PV values were established for each stimulus on each test to which one or more responses were given, by merely counting the number of different Basic Concepts contained in the sample's data. We wished to know whether, e.g., 1, 10, 20 or 40 different concepts were given by the Ss responding to the given stimulus.

As illustrations, 22 different percepts were given in the group's responses to the D1-D7 combined areas on Rorschach Card III; only four different percepts were elicited in all the

responses to D1 Card II; and 14 percepts were given to the photograph of the Statue of Liberty.

ANALYSIS OF DATA

Since each stimulus on the four tests to which one or more subjects gave scorable responses could be given both SV and PV values, a correlation was obtained between these two dimensions. These data are presented in Table I. The distributions of SV and PV values were plotted for the four tests and are presented in Figures 1 and 2 respectively.² The mean number of responses given by the 48 Ss to each test and the respective standard deviations, the number of potential stimuli³ in each of the tests, and finally the percentage of potential stimuli used by the average S were com-

² Pre-publication informal testing of this paper's communicability revealed how totally incomprehensible are Figures 1 and 2 without further explanation. (We would duly note that other graphic representations were attempted with even less communicability or else they achieved it only at the expense of distorting the concepts presented here.)

Let us illustrate how Figure 1 should be comprehended by discussing the first two plots of the curve representing the SV value distribution for the Modified Rorschach (the solid line). The first point on this line at the extreme left should be interpreted to read, one hundred twenty Modified Rorschach stimuli were *each* responded to by less than ten per cent of the Ss; the second point on this curve should be interpreted as, ten stimuli were *each* responded to by fifteen per cent of the Ss, etc.

Likewise, in Figure 2, for the Modified Rorschach data (again the solid line), we would read the extreme left plot as one hundred ten Modified Rorschach stimuli *each* received two or less basic percepts regardless of how many Ss responded to them; fifteen such stimuli *each* received about five basic percepts regardless of how many Ss responded to them, etc.

³ "Potential stimuli" was defined for each experimental test as, "the total number of discrete stimuli which were responded to by one or more Ss in this sample." As a consequence it should be remembered that each such number is an estimated statistic based only on one sample of Ss. It is likely that this estimate should vary depending on the group of Ss studied—both in regard to the group's size and to its composition.

puted and are presented in Table II.

RESULTS

As Table I indicates, the correlations between Selection Variable and Percept Variation values on the Modified Rorschach, Modified Behn-Rorschach and the Picture Title Test are all significantly beyond zero, at least at the one per cent level. The correlation for the Object Recognition Test does not differ significantly from zero but it does differ obviously from the other correlations because of its negative direction. The Modified-Behn, Picture Title Test and Object Recognition Test do not seemingly resemble the Modified Rorschach when these correlations are compared. In the case of the Picture Title Test and the Modified-Behn, apparently the more people respond to a given stimulus, the more different interpretations will be made of it—this relationship being here very much greater than is the case on the Rorschach, or on the Object Recognition Test as inspection of the various *k*'s clearly brings out.

While clinical data exist (6) which stress the notion that the Behn produces more stereotyped records than the Rorschach, inspection of our data suggests that once Ss give anything but Populars on the Behn, they produce highly idiosyncratic data. This possibly could account for such high correlations between SV and PV values.

As noted above the negative correlations between SV and PV values on the Object Recognition Test, differ from the positive ones obtained in the other three instances. As Table II indicates, the Ss on the average responded to a far greater proportion of the test stimuli than on the other tests. While this negative correlation is not significantly different from zero its negative direction suggests that there was possibly more essential agreement in the content of the responses to these stimuli, as more Ss select the same stimuli for response.

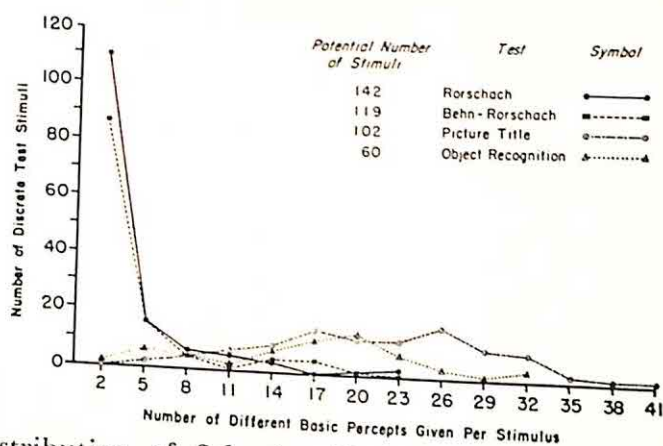


FIGURE 1—Distribution of Selection Variable Values (Percentage of Total Group Responding to Given Stimulus) of the Various Stimuli in Four Projective Tests.

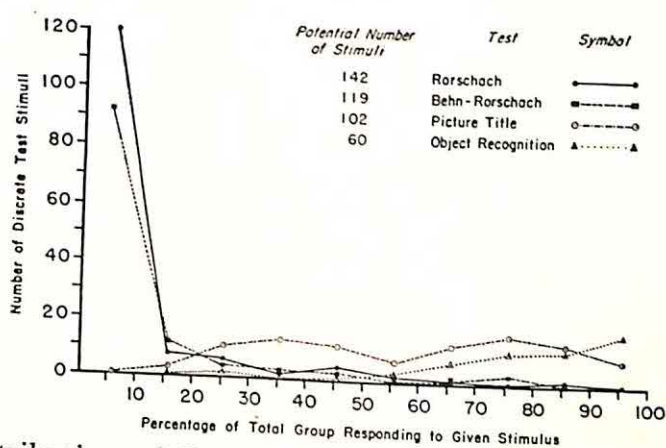


FIGURE 2—Distribution of Percept Variation Values (Number of Different Basic Percepts Given Per Stimulus) of the Various Stimuli in Four Projective Tests

TABLE I—Correlations Between SV and PV Values on Four Projective Tests

Number of Stimuli	Test	r	k
142	Modified Rorschach	.28	.96
119	Modified Behn-Rorschach	.89	.46
102	Picture Title	.79	.61
60	Object Recognition	-.19	.98

TABLE II—Mean Percentage of Potential Stimuli Employed by Ss to Four Projective Tests

Test	Mean Number of Responses	σ S.D.	Number of Potential Stimuli	Mean Percentage of Potential Stimuli Used
Modified Rorschach	11.4	4.1	142	8%
Modified Behn-Rorschach	11.5	4.3	119	10%
Picture Title	59.9	19.0	102	58%
Object Recognition	49.6	6.2	60	82%

Perhaps more simply we could state that there were more "populars" on this test than on the other three.

By inspection of the graphs in Figure 1 illustrating the distributions of SV values for the four tests, one can see that the SV distributions for the Modified Rorschach and the Modified Behn roughly correspond. Likewise, the SV distributions for the Picture Title Test and for the Object Recognition Test have roughly the same shape. However, there is visually little or no correspondence between the SV distributions of the two ink blot tests and the SV distributions for the latter two tests. The distributions in the first two instances rather resemble J-curves whereas in the latter two cases, they begin to approach a normal curve.

Similar relations appear to hold for the distribution of PV values on these same four tests as is seen in Figure 2. There is visible similarity between the distributions of PV values on the Modified Rorschach and the Modified Behn, and the PV distributions of the Picture Title Test and of the Object Recognition Test are likewise similar. Here too the first two distributions do not resemble the last two distributions.

Table II presents the percentage of potential stimuli utilized on the average in the four tests. Here again the data from the Modified Rorschach and the Modified-Behn show high correspondence. Also there is fair correspondence between data on the Picture Title Test and the Object Recognition Test. On the basis of these data, we can say that there is little likelihood that any one S will respond to the majority of possible stimuli on either the Modified Rorschach or the Modified-Behn, but the probability is quite high on the last two tests that S will deal with most, but not all, of the stimuli presented him.

DISCUSSION

The intent of the overall investigation of which this study is only a

part has been to develop conceptual tools which could be used to assess *both stimuli and subjects*. You will note that whenever we have used our two concepts to describe test structure, we have carefully referred to them as "values." On the other hand, whenever we have used these concepts to assess the subjects' behavior, we have referred to them as "scores." Thus we have Selection Variable *values* used when referring to test structure and Selection Variable *scores* used to evaluate S's performance in a given test.

On a concrete level, this paper demonstrates one method of showing how the same group of subjects perform on four tests. This is, to use Conant's (3) distinctions, the "tactical" intent of the paper. However, the strategical intent goes much further than that if the rationale of this approach is carefully followed through.

The methodology employed here is that test stimuli should be measured solely in terms of their effects on Ss. It is assumed that these effects (Ss' responses) will be resultant in part of the entire testing conditions and in part of the total configuration of the Ss' personalities. This means that we accept of necessity that any measures characterizing test structure will be relative—that these measures could be maximally meaningful only if the experimental situation was fully specified and the composition of the Ss making up the sample was fully known. However, with our present measuring techniques, we can only crudely estimate the effects of these two areas. One significant benefit emerges from this approach: once the test material is described in psychologically meaningful terms we can then readily characterize the individual S in terms of the groups' reactions to the stimuli. This apparent "lifting ourselves by our bootstraps" seemingly results in psychological description of both stimuli and subjects. Here we are not reduced to specifying our

stimuli in physical terms or in terms of unverified psychological characteristics, rather we can describe their observed behavioral effects. It is hoped that these "behavioral specifications" permit us to compare a wider range of stimulus conditions than we have previously. In any situation we can always ask, "To how many different aspects of this situation do Ss react?" and, "For a given stimulus how many different effects does it evoke in the Ss responding to it under specified conditions?" The answers to both questions must be viewed as statistics—that is to say, only estimates can be given for their true values if we attempt to generalize beyond the exact experimental situation and the particular group of Ss under study. The rationale as thus presented seemingly combines both the phenomenological and probabilistic views of perception. It is left to the reader to decide whether this is a better behaviorism.

Perhaps a discussion of how an "ideal" projective test should look in terms of the variables presented here may serve to illustrate the potential value of this approach.

(1) It would appear desirable to have the normal subject respond to a large majority of the stimuli in the "ideal" test but not to all. This would mean that the bulk of the stimuli should have relatively high SV values. If this condition were met, a larger number of the stimuli could be more adequately understood and evaluated reliably. Many of the problems of inadequate norms for D, Dd, and Dr stimuli, such as those that occur on the standard Rorschach could be eliminated or reduced to a minimum.

(2) On the ideal test, it is hypothesized that the correlation between SV and PV values for the stimuli should not be significantly different from zero in large normal samples. This would permit us to study SV and PV scores of the Ss to determine whether these scores are correlated or are related to other variables. It is suspected that both SV and PV scores of Ss

are related to Ss' intelligence scores, perhaps at a significant level.

(3) A third problem emerges here which is related to the above discussion. It is concerned with the length of the test, and its constituent parts. At the present we know little about the universe of correlations between SV and PV values, or for that matter between any other measures which could serve to characterize both test structure and Ss' behavior. While we refer to structured and unstructured interviews and we make similar statements about other real life situations, it is still debatable whether we are discussing the same things as when we discuss the structure of projective and non-projective tests. In brief, we cannot specify what the optimal distributions of values assessing test structure should be on the ideal test if it is to be maximally predictive. Apparently the only solution at this time would be to increase the length of the test so that measurement of Ss performances on *parts* of the test would meet particular predictive needs; i.e., performance on one part of the test could be related to behavior in unstructured interviews; on another part, to rigid highly conforming behavior expected in certain social situations, etc. Clinically today, we partially meet this problem by administering a battery of tests. However, such tests were seldom constructed with the characteristics or degree of structure a major explicit concern.

(4) A fourth desirable characteristic for the ideal test would be a method for *quantitative* sequence analysis. Most clinicians today feel that much relevant information is obtained through qualitative sequence analysis of Rorschach and TAT protocols. As a consequence, it appears that the *sequence* of the stimulus distributions making up the test would have to be so ordered as to make such an analysis not only possible, but maximally predictive. Unfortunately, it appears that the statisticians have not provided us with a mathematical sys-

tem which would make this possible today. However, it is not unreasonable to expect that such a system could be created in the relatively near future.

As one can see, these tentative specifications for the "ideal" test are limited in scope and in kind. This is due, in part, to the fact that we are talking in terms of only two variables. Establishment of several more such variables is clearly needed to account for the variance of behavior which is presently clinically observed in the Rorschach-like test situation. However, it is felt that the methodology involved here provides us with a guide to the development of such measures. Research currently underway has explored certain other variables. These include (1) total number of words used by Ss responding to a given stimulus, (2) level of certainty implicitly expressed in such terms as, "it clearly was a . . .," "it looks like . . .," "perhaps it might have been . . .," etc., (3) number of modifiers attached to the basic percept used to label the stimuli, and (4) levels of specificity or generality of the basic percepts elicited by stimuli. Elsewhere (4), it was also suggested that a score could be established for a given stimulus by determining the average time elapsed before Ss selected it for response (in either the case where it is presented singly or among a group of other stimuli). Finally, Blake's (2) study of eye movements suggests another such measure.

SUMMARY

Two operationally-defined measures assessing four projective tests in terms of their respective stimulus distributions were presented here. The first, called Selection Variable Value,

is based on frequency of a group's responses to a given stimulus. The second, labeled Percept Variation Value, is based on the range of different concepts contained in a group's responses to the same stimulus. The implications of the varying degrees of correlation between these two dimensions on the four tests studied were discussed. Certain other potential dimensions were indicated and the fruitfulness of the methodological approach employed was discussed. The primary advantage in this approach lies in the fact that these dimensions lend themselves to the study of both different tests and different individuals. This approach may possibly lead to the construction of new projective tests based on *known* test parameters. The goal of this research is the reduction of the mystery in projective techniques without removing their projective characteristics.

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Motion Perception, Time Perspective, and Creativity¹

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Some years ago Werner (7) published a paper in which he introduced the term, illusory motion, to describe the perception of motion in an object physically at rest. In this category he placed the perception of movement in pictures suggestive of motion when presented for brief periods of time. Other instances were the autokinetic phenomenon and the apparent movement of still pictures in a moving field. In all of these cases Werner contended that the subject actually perceived movement, in contradistinction to empathic movement where, as in the Rorschach, only an impression of motion occurs and not the experience of actual physical displacement of the object. He suggests that the cognitive or interpretive aspects of the perceptual process are primary in empathic responses while they are of less importance in illusory motion.

Although this distinction seems to be a valid one, further work with the tachistoscopically exposed pictures suggestive of motion indicates that with normal adult subjects the responses are probably of an interpretive nature. Thus, this particular type of motion perception would seem to be more adequately classified as empathic for normal adults, although among the feebleminded children with whom Werner did his experimentation it may well be that the experience of displacement does occur. This conclusion is reinforced by the similarity between the brief-interval method of exposure and the out-of-focus procedure employed by Douglas (1). In this latter instance, where stimulus ambiguity was induced by a

somewhat different method of presentation, there was clear-cut evidence that movement responses were primarily a result of cognitive elaboration which went beyond the mere sensory facts.

The very interpretive nature of the empathic movement responses suggests that they may be a rich source of information about individual personality. Such a conclusion was reached many years ago by Rorschach (3), and a variety of investigators since have followed his lead in assigning various meanings to the number of such responses obtained in Rorschach records. Unfortunately, however, there has not been widespread agreement either on the processes involved in producing the movement response or on the particular interpretations which should be applied to people who do or do not ascribe motion to the inkblots. Further, due to differences in scoring procedures as well as differences in methods of conducting the inquiry, there is a very real question as to the reliability of the empathic responses on the Rorschach.

It was in the hope of shedding further light on the personality factors inherent in empathic percepts that this study was undertaken. Because of the difficulties involved in obtaining a reliable measure from the Rorschach test which would have the same meaning for all users of that instrument, it seemed advisable to employ some other method which might permit more consistent scoring. Werner's pictures suggestive of motion were accordingly selected. In trying to establish personality factors associated with this type of motion perception, we decided to concentrate first on hypotheses proposed by other

¹ This paper constitutes a major revision of an M.A. thesis submitted to the Department of Psychology, Clark University in 1952.

psychologists and secondly on features that seemed to be theoretically consistent with the fact that we were dealing with complex cognitive elaboration of perceptual stimuli. Thus, we were interested in such things as the composition of our subjects' fantasy lives, i.e. whether the heroes of their fantasies were active or passive, emotional or unemotional, thinkers or doers. Further, we wanted information on the tendency to empathize with other human beings, the potential for creative work, and characteristic modes of thought, whether inhibited or free. For these purposes the Thematic Apperception Test seemed to be the best instrument available since it actually taps many aspects of the fantasy life of the individual.

PROCEDURE

Thirty-six students, who at the time of testing were members of undergraduate psychology classes at Clark University, were used as subjects. Participation in research was required as part of the course work and thus the sample was not restricted to volunteers.

Empathic motion situation. The stimuli consisted of ten line drawings in black ink on a $5\frac{3}{4}$ inch square of white paper. These pictures were selected from an original trial group of thirty as the most effective in differentiating between subjects who frequently and infrequently reported motion. The drawings in the order of presentation were:

1. A man with skis on his feet drawn in such a way as to form approximately a thirty degree angle with the horizontal. The legs are slightly bent and the arms are extended. In each hand is a ski pole which slants back from the figure. The man is facing to the left.
2. A man tilted at about a twenty degree angle from the vertical with his right arm extended out from his side and his left arm raised. The legs are spread and a

parachute is open above the man with lines attached at the shoulders to a parachute harness which the man is wearing.

3. A man facing to the left with his left leg bent at the knee and raised. The arms are straight down at his sides.
4. A steamship with two smoke stacks and smoke slanting back from each. The water line is indicated and waves are drawn around the bow. The ship is facing toward the left.
5. Identical with picture two except that the ground is drawn in at the base of the picture in such a way as to leave a gap between the man's legs and the ground.
6. A steam engine with one car attached and railroad tracks drawn in under the wheels. The engine is facing to the left.
7. A man facing to the left with both knees very slightly bent and both arms extended in front of him.
8. A man facing to the right with a baseball bat over his right shoulder. His left leg is bent at the knee and raised. A baseball is drawn in at shoulder height to the right of the man.
9. Identical with picture six except that the railroad tracks are not included.
10. Identical with picture one except that the ski poles are not included.

These pictures were presented in a Dodge tachistoscope with a distance of twenty inches between the eyepiece and the stimulus. The pre-exposure field, as well as the exposure field, was lighted by two, four-watt, daylight bulbs. A central fixation point was placed in the center of the white paper in the pre-exposure field. The viewing aperture was shielded by a shade cut to fit around the subjects' eyes in such a way as to eliminate stray light from the field of vision. The subject sat at one end of the table with the tachistoscope in front of him. The other end of the table held the electronic timing ap-

paratus and a small, shaded table lamp besides providing a writing space for the experimenter. This lamp was focused on the writing space, the rest of the room being in semi-darkness throughout the testing.

The instructions were as follows:

As soon as the machine warms up you will see it lighted up inside and a dot in front of you. I want you to keep watching the dot and I will flash a picture for a very short time. You should tell me what you see if anything, what action is taking place if any, and any comments you may have. I will show you each picture just once. Do you understand?

The drawings were all exposed for a constant .12 second period which was sufficient to permit a clear but very brief viewing. The subjects' responses were recorded verbatim. There was no inquiry of any kind.

Selection of high and low groups. The resulting protocols were then scored by the author. Each response was analyzed to determine whether or not the subject had employed an active verb or participle in describing any part of the picture. Thus, statements such as—"a train going to the right," "a man swinging a bat," and "the man drifted down in a parachute" were considered as motion responses, while "a man with a baseball bat," "a train facing to the left," and "a boat on the sea" were not. Any ascription of movement was scored as such except in those few cases where subjects explicitly denied motion after suggesting it; thus—"A man going up stairs. No. He's standing there with one foot up."

At this point ten protocols were selected at random and submitted to two additional scorers² as a check on the original assumption that higher reliability would be obtained with pictures suggestive of motion than is commonly found for the Rorschach. Both judges agreed with the author's scoring on 99 per cent of the state-

ments, and they agreed among themselves on 98 per cent.

For purposes of further study two extreme groups were then selected. All subjects with seven or more movement responses were placed in the high group, while those with four or less were designated as the low group. These groups, each consisting of ten subjects, had mean scores of 7.8 and 2.7 respectively, while the mean for all 36 subjects was 5.4. Although there were more males in the high group and more females in the low, this difference was not reliable. ACE scores were available for six members of the high group and eight in the low. The means of 124 and 122 suggest that there was no difference in intelligence.

Thematic Apperception Test situation. A ten-picture TAT was administered in a single session during the second month after the original testing to these twenty subjects. Cards 1, 2, 3BM, 4, 5, 10, 13, 14, 15, and 20 from the third revision of the TAT distributed by the Harvard University Press were used. The subjects were seated opposite the examiner and given the standard instructions. Prompting was kept to a minimum and limited to requests for the past or future or a greater elaboration of the story. In all cases these requests were stated in very general terms. The subject's words were recorded and later transcribed for the purpose of analysis.

ANALYSIS AND RESULTS

The TAT protocols were initially scored using the level analysis technique developed by Tomkins (6). This approach provides an index of the degree to which the primary characters or heroes of the stories employ different modes of functioning. A subject's score for each level was the number of times it was employed in the ten stories divided by the total number of levels scored. Since, as indicated at the bottom of Table 1, the two extreme groups did

² Drs. Louis Carini, now at Rockland State Hospital and Ricardo Morant, now at Brandeis University.

TABLE I—Significance of Differences
Between Mean Scores on TAT
Levels for High and Low
Motion Groups

Level	High Group	Low Group	<i>t</i>
Description	14.14	12.82	.57
Event	10.87	10.25	.34
Behavior	31.30	32.37	.36
Active	81.98	82.11	.03
Passive	18.02	17.89	.03
Verbalization	2.95	3.72	.71
Feeling	13.03	11.92	.50
Thought	7.68	5.96	.82
Visual Perception	5.01	7.17	1.42
Auditory Perception .....	.83	1.16	.79
Physical Sensation .....	.49	.89	1.14
Special State	1.22	2.04	1.58
Attention .....	.12	.56	1.38
Memory	1.33	1.18	.22
Wish	3.37	2.92	.41
Intention	5.06	4.24	.72
Expectation	1.55	1.43	.18
Dream .....	.23	.70	1.24
Interest .....	.40	.22	.51
Sentiment .....	.50	.54	.10
Total Levels	100.10	110.10	.52

not differ in the total number of levels employed, this procedure is practically identical with the use of raw frequencies and yields similar results. The levels are described briefly below. Verbalization was added to the Tomkins schema.

1. Description. Material objects or people in the pictures are described.
2. Event. An event either of a physical nature or involving the functioning of an environmental character takes place or something happens to a hero.
3. Behavior. A hero functions on a motor level, he does something.
4. Verbalization. A hero says something out loud.
5. Feeling. The emotions or moods of a hero are mentioned.
6. Thought. A hero thinks about something.
7. Perception, Visual. A hero sees something. Perception, Auditory. A hero hears something.
8. Physical Sensation. A hero experiences some bodily sensation.
9. Special State. A hero is in some condition other than the normal waking state.
10. Attention. A hero directs his attention toward some aspect of the environment.
11. Memory. A hero remembers something.

12. Wish. A hero wishes for something or to do something.
13. Intention. A hero intends to function in a certain way.
14. Expectation. A hero expects an event to occur or another character to function in a certain way in the future.
15. Dream. A hero dreams or fantasies something.
16. Interest. A hero is interested in something.
17. Sentiment. A hero likes or dislikes something.

In addition, the Behavior responses were designated as either active, involving normally observable movement, or passive, involving no actual movement.

Of these levels we were particularly interested in those which seemed to have some relation to the perception of movement. Thus, the various Behavior categories, Thought, Perception, Attention, and Dream were considered the most probable sources of differences between the two groups. Unfortunately these hopes were not realized. As will be evident from Table I the level analysis yielded no reliable differences.

As a test of the hypothesis that empathic motion is a function of a capacity for *feeling with* other people, we applied the Dymond (2) empathy index to the data. This measure is derived by dividing the number of characters whose *inner life* is described by the total number of people mentioned in the protocol. Again we were unsuccessful. The high and low groups had indices of .54 and .50 respectively yielding a *t* value of .74.

Next we checked the story outcomes to see whether the subjects followed directions and dealt with the future, or terminated their stories in the present, i.e. at the time depicted by the picture. Here we were operating on a vague hunch that since motion is a process in time, its perception might be a function of freedom in dealing with the future. This initial hypothesis proved to be correct. Although both groups characteristical-

TABLE II—Significance of Differences Between Mean Amount of Prompting on TAT Given High and Low Motion Groups

Type of prompting	High Group	Low Group	<i>t</i>	<i>P</i>
Total prompting.....	3.7	5.7	2.15	<.05
Requests for outcomes.....	1.9	4.3	3.12	<.01
Other requests.....	1.8	1.1	.65	—

ly ended their stories in the future, the high group did so on an average of nine of the ten stories, while the lows had a mean of 7.9. The *t* of 2.20 was reliable at less than the .05 level. This difference is admittedly small. However, the author made an effort to obtain a full story from the subjects in order to have protocols long enough to provide an adequate sample of fantasy activity, and much of the prompting was therefore devoted to getting an outcome in the future. The results suggest that there may have been a difference between the amount of such prompting for the two groups with the high group receiving more than its fair share of requests for an outcome. An analysis of the number of promptings in each group is presented in Table II. Contrary to expectations the low group was prompted a significantly greater number of times than the high group and this difference in total prompting is wholly attributable to a marked difference in the number of requests for an outcome. The author was in no way conscious of this difference in his own behavior in the test situation and in fact did not realize the existence of this factor until after the outcome-time analysis had been completed. It seems that he was reacting to a very strong tendency in the low group to avoid dealing with the future and that if only the initial instructions had been given, there would have been very few future outcomes to their stories.

Following up this lead we next turned to our data on the levels of Wish, Intention, and Expectation, all of which tend to be future oriented. Our question was: when a hero wishes for something or expects something to happen or intends to do something,

is there any indication that these wishes, expectations, and intentions are fulfilled, or are they not fulfilled? In other words, we wanted to know whether the groups differed in their willingness to specify a future consistent with their wishes, intentions, and expectations. Here we had in mind the fact that a person engaged in creative work such as a composer or artist or scientist must be capable of making a bet on what his finished product will be like in order to be truly creative. He must be able to hold an image of the completed product in mind as a guide to his work. He must have faith that his wishes, intentions, and expectations will be fulfilled.

We first noted for each story whether one of the three levels occurred and whether there was fulfillment. A subject's highest possible score was thus ten. The obtained means were for the high motion group 3.8 stories and for the low group 1.9. The *t* value of 2.38 gives a *P* of less than .05. Reversing this procedure we then looked for all stories where the subject either specified that wishes, expectations, and intentions were not fulfilled or made this assumption tenable by not mentioning the subject further. It should be emphasized that a single story could be scored both "fulfilled" and "not fulfilled" if two future-oriented levels were employed. The highs had an average of only 2.6 such stories while the mean for the lows was 4.4. The *t* of 2.12 was significant at less than the .05 level.

Having established these rather striking variations in time perspective we read through the protocols several times looking for content variables which might differentiate between

the two groups and thus help explain the differences in the extent of projection into the future. It is impossible to say how many variables were actually tested and discarded in this process. For this reason the following results should be cross-validated on another sample. However, the findings are sufficiently consistent to suggest they are not spurious.

Our first significant finding turned up rather early in the analysis. We found a rather strong tendency for themes of sickness and death to appear in the stories of the low group. Further check revealed that, although the two groups did not differ on this variable where the hero was concerned, the lows had an average of 2.8 stories in which a person close to the hero, emotionally close that is, died or was taken sick, while the highs had a mean of 1.5. The t of 2.41 is significant (P less than .05). These people included parents, relatives, spouses, lovers, etc. Although the frequencies are low here, the set of ten pictures used did not include many of those which frequently elicit references to death and sickness.

Later we came across another set of findings which may also contribute to an understanding of prior results. These involved the way in which parents were portrayed in the stories. One variable may be defined as a tendency to describe parents as loving and understanding people. They are said to be fond, permissive, close to their children, understanding, tender, affectionate, loving, etc. The second variable involved just the opposite attitude. Parents are essentially rejecting and domineering. They do not take their children's wishes into account. They force their children to do things, spank them, are neglectful and scoffing, frustrate their children, nag them, and do not understand them. Although the frequencies are low, probably due to the selection of pictures, the results are clear-cut. The high empathic motion group have an average of 1.2 stories portray-

ing loving or understanding parents, the low group only .2, that is only two stories out of 100. The t value is 2.27 (P less than .05). References to rejecting or domineering parents are up in the low group, however, with a mean of 1.9 as compared with .7 for the highs ($t = 2.45$, P less than .05).

DISCUSSION

Unfortunately studies such as this one, although they may offer valuable information on relationships between perceptual phenomena and personality characteristics, cannot establish conclusively the nature of the perceptual processes themselves. Thus, the specific causal factors which operate to produce percepts remain a matter of conjecture even though we have information on the kinds of people who respond in certain ways. Nevertheless, it is frequently the case that definite theoretical relationships exist between perceptual phenomena and personality characteristics found to be associated with them, theoretical relationships which are sufficiently convincing to bear serious consideration. We believe that our findings with regard to empathic motion are of this nature.

One feature of the perception of motion is the requirement that the object be viewed in two different positions at two different points in time. In the case of stimuli for empathic movement, this condition is not met. Both the Rorschach inkblots and the pictures suggestive of motion remain in one position. Thus, if a subject is to attribute motion to such a stimulus, he must draw on his prior experience with the particular cues to movement presented and then commit himself to a process in time which has in the past been associated with these cues. For such a person the cues have become intimately connected with physical displacement of objects, so much so that his first impulse on seeing what are for him motion cues is to say that the object is moving. This is true even when actual physical dis-

placement in time is not present. In view of the many common features in our environments, it seems probable that we all learn such associations between cues and real movement. Why then do many people report very little empathic movement or none at all? Either they have not formed the associations, i.e. have not had sufficient learning experience with moving objects of various kinds, or something acts to inhibit the movement response. In the present study most of the objects portrayed are sufficiently familiar so that a score of less than five seems highly improbable if insufficient learning were the crucial factor. Inhibition either on a conscious or unconscious basis seems a much more plausible explanation.

What, then, might be the cause of this inhibition of the movement response? We have mentioned that motion is a process in time. Thus, to report motion a subject must either see displacement or commit himself to the idea that displacement exists. In the empathic situation he must imply that there was movement for however brief a time in the past and that this activity will carry over beyond the immediate present into the future. It is just this commitment or bet on the nature of the future that seems to disturb our low motion perceivers. Either they avoid the future or they indicate that things will not turn out in accordance with their wishes, intentions, and expectations. It would seem that these people experience a sizeable amount of anxiety and insecurity as regards the future which results in a conscious or unconscious inhibition of movement responses. Where this insecurity is not present as in our high empathic motion group, the subject is not restricted to a mere description of the present stimulus and is free to bet on a state in the future thus establishing the conditions for a motion response.

It is impossible to specify conclusively what the individual bases of this insecurity as regards the future

might be. However, our results make certain hypotheses tenable. We find in our low group more frequent references to the death or sickness of loved ones than among the high. At the present stage of our knowledge of projective techniques, it is impossible to say definitely whether this represents a wish, an expectation, or actual events in the past. If actual life experiences are involved these may serve only to increase the expectation of similar events in the future. In any event a fantasy life which contains frequent thoughts of the death or sickness of those to whom we have emotional attachments does not seem to offer much room for viewing the future with security and calm certainty.

Similar factors seem to be operative in our subjects' stories dealing with parents. The low motion group has a fantasy life in which parents are pictured as rejecting and domineering with practically no evidence of love and understanding. Again we do not know whether this represents an actual state of affairs, a distortion of existing circumstances by the subjects, an expectation, or a wish. Whatever the situation may be, such a perception of one's parents is certainly fertile ground for the development of attitudes of insecurity as regards the future. In contrast, the high group with their perception of parents as loving and understanding would seem to have a much firmer basis for the development of feelings of security.

One further factor deserves mention. It has frequently been hypothesized that empathic responses are indicative of creative tendencies in the individual. Our findings seem to offer some support for this view, although we would not be willing to take the position that all of our high group are truly creative people. In order to produce a creative product an individual must have, not only certain personality characteristics, but opportunity, motivation, and adequate intelligence. Even the requisite person-

ality component does not seem to be unitary, but rather involves a number of necessary conditions for creative work. As yet we do not know with any certainty what these requisite personality variables are. However, Stein with studies of artists (4) and chemists (5) has presented some valuable evidence. Among the factors he mentions is the need for a time perspective oriented toward the future which will permit the sensing in the present of the general outlines of the creative product's final form. It is just this capacity for making a bet on the future combined with confidence that the final outcome will be as predicted that characterizes our high empathic motion group. They would seem to have one of the necessary requirements for creativity. Whether they have the other requirements is unknown, but it seems improbable that they all do. The low motion perceivers on the other hand would seem to be quite incapable of creative work.

Since empathic movement has been most frequently measured by the Rorschach technique, the question of the equivalence between this approach and the pictures suggestive of motion arises. As previously indicated there are many problems involved in scoring M reliably. Even if these can be solved we do not know that the two types of empathic motion are identical. They probably are, but the Rorschach has a greater variety of potential motion cues and employs somewhat different instructions. Further, the tachistoscopic method of presenting stimuli may have a specific effect. In view of these unknowns the present findings should be employed in interpreting Rorschach data only where there is definite supporting material from other sources. We hope that further research will help to solve the question of the relationship between the Rorschach and the present situation as well as the many other questions that have been raised in the course of this discussion.

SUMMARY

In an attempt to establish a relationship between the perception of empathic motion and personality characteristics, ten pictures suggestive of motion were presented tachistoscopically to a group of undergraduate students. The Thematic Apperception Test was then administered to the two extreme groups. The major difference between the high and low motion perceivers occurred in dealing with the future. While the high group exhibited great freedom in treating conditions in the future, the lows seemed to be inhibited in this respect. In addition the low motion perceivers were found to be more preoccupied with the death and sickness of loved ones, more frequently described parents as domineering and rejecting, and less frequently attributed love and understanding to parents. This suggests the theory that movement perception in the present situation, and possibly in the Rorschach, is a function of freedom in making a bet on the future and that inhibition in this respect leads to inhibition of motion responses. The fact that a motion response involves a commitment as to the future state of the perceived object seems to be consistent with this interpretation. Furthermore the preoccupation with the death and sickness of loved ones, as well as with rejecting parents, among the lows suggests a basis in insecurity and anxiety for their inhibition in dealing with the future and in the perception of motion. The highs on the other hand with their greater freedom in dealing with the future seem to have no difficulty in ascribing motion to stationary stimuli. This suggests that they may possess one of the important characteristics required for creative work, the ability to visualize in the present an outline of what the completed product will be like in the future. Such a capacity seems to be lacking in the low empathic movement group.

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Rorschach Changes During Psychoanalysis

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Do recognizable personality changes take place during psychoanalytic treatment? The affirmative answer often given rests largely on the assertions of the analysts and their patients. A skeptical critic, however, might question these assertions; the analysts' opinions may be influenced by the natural desire to believe that they are helping their patients, while the patients' statements (even though evaluated objectively by such methods as those used by the Rogerian group) are open to the objection cited by Dymond: "Perhaps the clients *say* they are better, but are they 'really'?" (2, p. 109). There have been few studies comparing personality tests taken before and after treatment, and even these few are sometimes open to the objection that the judges knew which records were the earlier ones, so that their judgments may have been biased.

For client-centered therapy, a recent well-controlled experiment has been reported by Rogers and Dymond (2). TAT records were obtained from 20 persons before and after undergoing client-centered therapy, and from 10 control subjects who had no treatment. These records were submitted to raters who knew nothing about the source of the records, and were evaluated for degree of personal adjustment. A difference, significant at the .01 level, was found in the direction of improved adjustment after therapy. No significant differences were found in the control group. However, the actual degree of improvement was slight, being .6 of an interval on the seven-point rating scale.

The present study compares pairs of Rorschach records of 20 psychoanalytic patients. One record of each pair was taken at the beginning of treatment, the other was taken later.

Two questions are raised: Can blind examination of the paired Rorschachs show which records were the earlier ones? What attributes distinguish the earlier from the later records?

PROCEDURE

The Rorschach records used in the study were obtained by one of the present writers (MB) over a six-year period during the course of ordinary clinical practice. At the time they were taken, there was no expectation of using them for research.

The only criteria for selection of the records were (a) that two protocols, one taken near the beginning of treatment, should be available for the same subject, and (b) that neither of the judges should have seen any of the records before. All available adult cases from the examiner's files which met these criteria were included in the study.

The 20 pairs of records were prepared by the original examiner to eliminate all clues which might influence the two present writers who served as judges (EEM and GRS). References to the patient's age, his problems, his attitude toward treatment, and all other verbalizations related to his possible status as a patient were blacked out. The records were photostated to eliminate such clues as the yellowing of the original papers through age. Each record of each pair included only a code letter for the patients, the sex, and the two ages at the time the two records had been taken.

Patients ranged in age from 17 to 48, with a mean age of 30. Time in treatment between the first and second Rorschachs ranged from 4 months to 42 months, with a mean of 20 and a median of 18 months. With two exceptions, all the second Rorschachs

were obtained during treatment rather than upon termination. All patients were ambulatory; all were seen on a private-fee basis; all were seen by analysts associated with the William Alanson White Institute, at which it is customary for analysts to see patients three times a week.

The judges set out to choose which record in each case had been obtained later in the course of treatment. They evaluated the records independently, reaching the same conclusion in all except three cases. On these cases, agreement was reached after discussion. The judges did not make any arbitrary use of "signs," but used whatever methods seemed appropriate for the individual case. In some cases decisions were made chiefly by comparison of content between the two records; in others, emphasis was placed on comparison of the two psychograms.

Examples of the informal summary formulations made for records judged as obtained later in treatment include:

A: This record is worse for social adjustment than the others, but livelier, and has more vigorous M's.

B: This record seems less evasive and hostile than the other record, and the anxiety comes through more frankly.

C: Both records are very bad, but this one seems to be taken later in treatment because the content of some of the responses suggests a more hopeful attitude about problems.

D: This record seems to be the second one because it is more vigorous, active, alive and productive; more open hostility; more M; higher sum C. Probably the social behavior is more disturbed, but the patient is beginning to get insights.

E: Psychograms are similar in two records but content changes seem to indicate changes in personality. The response "cocoon and ant eggs" changes to "baby" in the same area; the response "rats" changes to "bears."

As these notes suggest, the judges

were not always able to select one record as definitely reflecting a better over-all adjustment than the other. Instead, they frequently selected a record as indicating response to treatment because it suggested less evasiveness, less repression, more open anxiety, and greater emotionality, not always well-controlled. Such records seemed to come from individuals who had grown more alive and responsive, but who might also be feeling more conscious anxiety.

Therefore, still working without any information as to whether they had been correct in judging which record in each case had been obtained later in treatment, the judges went over the records once more and winnowed out cases in which one record showed a personal adjustment which seemed *unquestionably* and *markedly* superior to the adjustment shown in the other record. Here, personal adjustment was understood as comprising (a) a greater feeling of subjective well-being and (b) a better social adjustment, insofar as these two qualities could be inferred from the Rorschachs.

A stringent screening procedure was used for this aspect of the study. The judges worked independently, choosing only the cases about which they felt able to make fully confident judgments. Both judges selected the same five cases independently; one judge added a sixth case, which was discarded without discussion, since it did not represent the confident opinion of both judges. Five cases thus remained in this category.

RESULTS

In 17 of the 20 cases, the judges were accurate in selecting the record which had been obtained later in treatment. When the significance of this finding is tested by Bernoulli's method of the expansion of the binomial theorem, on a two-tailed test which assumes that chance would have made it equally likely for the judges to err in either direction on

each case, the level of confidence is .003.

Of the five cases in which one record was selected as showing unquestionably better adjustment than the other, all the "better" records had been obtained later in treatment than the "worse" records.

Despite the small number of cases, it appears worthwhile to consider whether these five cases differed in any identifiable way from the rest of the sample. It has been suggested that prognosis may be more favorable in cases where pathology is less severe (1). However, this possibility does not seem to be supported by the present data. The five patients who appeared to respond especially well to treatment were not less disturbed than the other cases, according to their Rorschach records. In fact, this sub-group included the patient who appeared most seriously disturbed of the entire sample. In this case, the first Rorschach seemed so frankly psychotic as to raise the question of how the patient could possibly remain ambulatory. After 33 months of treatment, the Rorschach still suggested an underlying psychosis but indicated much less anxiety and a greatly improved relationship to reality.

Neither in their age nor in duration of treatment were these five patients notably different from the rest of the sample. In comparison to the group mean of 30, these five patients were aged 21, 22, 27, 37 and 48 when the first Rorschachs were taken. Three of them fell below the mean in time in treatment, with 4, 7 and 10 months; two fell above the mean, with 30 and 33 months.

Consideration may also be given as to whether the three cases on which the judges erred can be distinguished from the 17 cases on which judgments were correct. Neither time in treatment nor severity of pathology were found to distinguish these cases from the group. The patients had been in treatment for 8, 14 and 22 months between the two Rorschachs. Their

ages were 21, 36 and 37. All three showed rather severe pathology, but so did most cases in the sample.

These cases cannot be regarded as showing a definitely worsened adjustment after treatment. Rather, one record in each case was erroneously judged as having been obtained later in treatment because it suggested less repression, fewer obsessional defenses, and more open anxiety. In these three cases, the Rorschach records suggest that analytic treatment resulted in the strengthening rather than the undoing of defenses.

DISCUSSION AND CONCLUSIONS

The implications of the study are limited, not only by the smallness of the sample, but also by the obvious disadvantages of taking Rorschach records as the sole criterion for evaluating personality changes during psychoanalysis. Within these limitations, the present study suggests the following conclusions:

1. Personality changes take place during psychoanalysis, and can be recognized through Rorschach records at a frequency far beyond chance expectation ($P = .003$).

2. Personality changes during psychoanalysis, insofar as they are reflected in the Rorschach, do not appear to follow a steady and consistent progress toward certain goals sometimes considered as included in a "good" adjustment, such as emotional control, lack of more than a mild degree of conscious anxiety, consideration of others, and ability to adjust reasonably well to social expectations. In some cases, Rorschachs taken later in treatment do appear to represent movement toward these goals. In other cases, Rorschachs taken later in treatment suggest that the psychoanalytic process is resulting in the breakthrough to consciousness of hitherto unacceptable impulses, with a consequent increase of conscious anxiety and perhaps an increase of discomfort along with greater emotional aliveness. Such an effect is

wholly congruent with psychoanalytic theory, which holds that during treatment impulses and feelings which have hitherto been repressed, or otherwise defended against, become conscious and can ultimately be handled appropriately by the ego. In this connection, it should be noted again that the second Rorschach had been obtained upon termination of treatment in only two cases of the sample. The remaining Rorschachs, therefore, may be regarded as representing an in-

termediate stage in the treatment process.

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The Projection of Hostility on the Rorschach and as a Result of Ego-Threat^{1,2}

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The term "projection" is one of the most widely used in the field of clinical psychology and personality study. Unfortunately, the concept is one of the most difficult to define, chiefly because projection has been viewed conceptually in varying ways by workers in the field. All of the definitions agree to the extent that projection is viewed as the ascribing of one's own motivations, feelings and behavior to other persons. Nevertheless, these definitions differ sufficiently so that three different aspects may be described.

Naive projection. The tendency to project may stem from a limited field of experience and the projector's insensitivity to differences between his limited experience and a novel situation.

Rationalized projection. Perception may be distorted by emotional biases or feelings. The projector often shows insight with regard to the expression of these feelings, but distorts in trying to justify the biases on rational grounds. Thus, the person buying in the "black market" says, "Everybody else is doing it."

Classical projection. A situation in which the ego feels threatened is likely to result in the ego's refusing to acknowledge the trait and in the subsequent attribution of the trait to the outside world.

Certain questions of increasing concern to the clinical psychologist arise from an examination of this trichotomy. What kind of projection occurs

on projective tests? How may it be measured? What is the relationship between overt behavior and the projection of fantasy material on projective techniques?

In an attempt to answer these questions, the trichotomy set forth in this paper was applied in interpreting previous research on the nature of projection (1, 6, 8, 10, 11, 12, 13). Several experimenters (1, 10, 12) have shown that projection has occurred on the Rorschach and TAT when feeling tone was aroused, but have not clearly demonstrated that projection occurs when the subjects are ego-defensive. It might be claimed, however, that "classical projection," being a dynamic construct, should not be expected to operate in a comparatively tension-free environment such as occurs in the usual administration of the Rorschach. If, however, an ego-threatening situation were to be created in which the subjects were severely criticized and told that they were hostile, this objection could not be raised.

Therefore, two hypotheses were formulated:

1. In a non ego-threatening situation, those persons who are hostile but possess insight into this fact ("rationalized projectors"), will project a significantly greater amount of hostility on the Rorschach than those persons who are equally hostile but lack self-insight.

2. In an ego-threatening situation, those persons who are hostile but lack insight into this fact ("classical projectors"), will project more hostility as a result of ego-threat than those persons who are hostile and insightful; friendly and insightful, and friendly and non-insightful.

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² The author wishes to express his thanks to Dr. Ira Iscoe, Dr. W. H. Holtzman, Dr. Philip Worchel, and Dr. Carson McGuire for giving the study the benefit of their valuable criticisms.

In an attempt to measure adequately the mechanisms of projection, the control of the following five variables was believed to be necessary: 1. The subject's possession of the trait to be examined must be objectively evaluated. 2. The subject's self-concept with regard to this trait must also be ascertained. 3. The trait must be amenable to examination by the instruments to be used in the study. 4. The conditions under which projection can and cannot be expected to operate must be fully investigated. 5. A projective score quantitatively sensitive enough to differentiate between various personality syndromes is necessary.

The attempt to control variables 1 and 2 was made through the use of the method of pooled ranks. The ranks were converted to normalized scores using Hull's tables (7, p. 182) and the mean score attributed to an individual by his peers was used as an objective estimate of his possession of a given trait. The individual's self-ranking provided a measure of his self-concept with regard to the trait.

Variable 3 was controlled by selecting the trait of "friendliness" for study. This trait did not arouse undue opposition from the subject because of reluctance to say anything unfavorable about the other members of his group,³ it could be easily ranked by subjects who were not professional psychologists, and was a trait with which the Rorschach dealt.

At first glance the assumption that the least friendly persons were the most hostile might seem questionable. The manner in which the least friend-

ly persons were defined, however, "By most friendly is meant that person who is the most cooperative, easiest to get along with, and *least hostile* in the fraternity." left little doubt that the least friendly persons were the most hostile ones.

Variable 4 was controlled by proposing two conditions to be tested; viz., the projective test situation (Rorschach), and an ego-threatening situation.

An attempt to control variable 5 was made by using the Examiner Rating Sheet as an index of the projection of hostility under ego-threat. This scale consisted of 19 statements taken from the larger Interview Rating Scale used by The University of Texas Testing and Guidance Bureau (14). A typical statement taken from this sheet was, "The interviewer is a warm, sincere individual." The subject rated each statement on a five-point scale: 5 for "strongly agree," 4 for "agree somewhat," 3 for "undecided," 2 for "doubtful" and 1 for "strongly disagree." The highest possible score was 95, the lowest 19.

Elizur's Rorschach Content Test (*hereafter referred to as the RCT*) had previously been used to measure hostility as derived from the content of the Rorschach (5). This scale, however, measures projection by means of a two-point scale; and the possibility existed that this scale might therefore be insensitive to differences in hostile projection between the experimental groups investigated in this study. A new scale was therefore developed (see Appendix A), called the Rorschach Hostility Scale (*hereafter referred to as RHS*). This scale has point values running from zero for no manifestation of hostility in the content of the Rorschach, to seven for extreme manifestation of hostility. The scale is essentially two dimensional. One dimension extends from impersonal expressions of hostility through actions expressed by variously more complex forms of phyla, culminating in direct expression of hostility

³ In a previous "pilot study," the trait of "hostility" had been used. The use of this trait, however, met with considerable resistance on the part of the subjects, who were reluctant to term any of their fraternity brothers as hostile. Consequently, the trait deemed at the other end of the continuum, "friendliness," was employed, with the assumption that those subjects who were the most friendly were the most hostile. The use of this continuum stems from a list used by Cattell (3).

by man. The higher the phyla, the higher the hostile score for a given action. The other dimension has to do with the overt-covertness of the action itself. Thus, two bears vying for a piece of fish receives a smaller hostility score than two bears fighting. Using 40 randomly selected records, the average Pearson r between three psychologists was .96. This indicates that the RHS has satisfactory reliability for use as a clinical instrument.

Since the author measured the projection of hostility with the RCT as well as the RHS, it was necessary to ensure that his scoring had not been biased in favor of the latter scale. Hence, twenty different records were selected at random and scored by an experienced psychologist, an advanced graduate student, and the author, using the RCT. The average r was .70, with the factor of bias being eliminated, since the author's correlation with each of the other two scorers was higher than their correlation with each other.

DESCRIPTION OF THE STUDY

Selection of Subjects

On the basis of group- and self-judgments of hostility, 80 men divided among four experimental groups of 20 men each (hostile-insightful, hostile non-insightful, friendly-insightful, friendly non-insightful), were drawn from 536 students in 23 fraternities and two dormitories at The University of Texas. To ensure that individuals chosen for the four experimental groups were either very hostile or very friendly, cutting scores based on consideration of the standard error of measurement of each of the group judgments were set up as criteria. The 20 most extreme cases exceeding the criteria scores for each of the four experimental groups were selected as subjects. Split-half reliability coefficients were obtained by dividing members of each fraternity and dormitory group randomly into two halves and computing the product-

moment correlation by correlating the means of the ranking of each half for each person in the group. The Spearman-Brown formula was then used to estimate the full length correlation. The scores for each fraternity and dormitory will henceforth be referred to as G scores.

The self scores (hereafter referred to as S scores) were obtained in another manner. Ideally, the reliability of S might be obtained from a complete re-ranking. The length of time consumed through such a procedure, in view of the large number of subjects, would have been quite extensive. Therefore, another method was adopted. A previous study by Calvin and Holtzman (2) suggested that the reliability of S in pooled rankings is at least .90. As a check on this finding, a group was selected at random and requested to make a second set of rankings a month later. The correlation between initial and second ranking for the 15 members was .89. In view of the high reliability despite the passage of time, it seems conservative to assume a reliability of .90 for self-rankings for the total population of subjects. To reduce the greater sampling fluctuation of the S score as compared to the G score, the standard deviation of self-rankings also was computed for the total population of subjects rather than for each individual group.

The chance of selecting an extreme subject incorrectly was to be no greater than .01. Hence, the criteria for selection of the hostile-insightful group was $G \geq 2.58$ (standard error of G) + mean of G, and $S \geq 2.58$ (standard error of S) + mean of S. (The standard error and mean will hereafter be referred to as SE and M, respectively.)

For the friendly-insightful group a similar formula was used except that now the cutting score were below the mean. The criteria was therefore, $G \leq 2.58 \text{ SE}_g - M_g$, and $S \leq 2.58 \text{ SE}_s - M_s$.

The hostile non-insightful and friendly non-insightful groups were chosen in the following manner: for the first of these groups, G was $\geq 2.58 SE_g + M_g$. To ensure non-insightfulness, the self-ranking had to be sufficiently below the G ranking so that the risk of error was to be .01 or less. Hence, the $(G-S)$ discrepancy had to be $\geq 2.58 \sqrt{SE_g^2 + SE_s^2} + M$ (g-s). For the friendly non-insightful group, G was $\geq 2.58 SE_g - M_g$. The amount by which an individual's S score had to exceed his G score for the individual to be non-insightful, was $\geq 2.58 \sqrt{SE_g^2 + SE_s^2} + M$ (g-s). The average reliability of the G scores for the 25 student groups was .86, the range being from .50 to .94. The standard deviation range of G varied from .57 to 1.21, while the standard errors ranged from .24 to .64. The reliability of the S scores was estimated to be .90, and the standard deviation and standard error values computed for the total population were 1.79 and .56, respectively. These S values were used as constant S criteria for the selection of subjects from each of the 25 groups.

PROCEDURE

The eighty experimental subjects were given a Rorschach individually and asked to give three responses for each card. There was no formal inquiry for determinants, and only the content, animation and description of the perceptions was recorded. At the conclusion of the administration of the cards, the examiner, after carefully glancing over the subject's record, said, "Now I shall give you a brief interpretation of what you have seen."

Each experimental group of 20 subjects was divided, and each half matched according to the means of the normalized group and self rankings and their respective standard deviations. None of the halves of each group differed from the other half by more than .02 for the G mean, .03 for

the S mean, .13 for the G standard deviation and .22 for the S standard deviation. None of these differences was significant at the .05 level.

Within each experimental group, one half received the interpretation "friendly" while the other half received the interpretation "hostile." Initially, in selecting the subjects, the experimental group to which each subject belonged was, of course, known. The author detached the name from the group so that at the time of testing (five weeks later), the author did not know to which experimental group any of the subjects belonged.

The following points were stated in the "friendly" report: 1. You cooperated very nicely in taking this test. You saw things readily because you were interested and really "put yourself" into it. 2. Your perceptions are very rich in creativity and imagination. 3. Your perceptions reveal a lot of feeling for people, and a lot of warmth; you are a friendly, cooperative person. 4. Your perceptions indicate a deep sensitivity for the needs of others. 5. You are, therefore, psychologically speaking, a mature and fairly well-adjusted person.

The following points were stressed in the "hostile" report: 1. You showed a lack of cooperation in taking this test. Your perceptions indicate that you were bored, disinterested, and didn't bother with the test. 2. Your perceptions are accordingly poor in imagination and indicate a lack of creativity. 3. You are pretty "cold" toward people and an uncooperative, hostile person. 4. Your perceptions indicate a lack of sensitivity to the needs of others. 5. You are, therefore, psychologically speaking, immature and not too well adjusted.

The examiner then presented the Examiner Rating Sheet to the subject, saying,

"Now I shall ask you to fill out anonymously a rating sheet whereby you evaluate me. This is a part of

some research that the psychology department is currently running. Do not put your name on this sheet. When you have finished the rating, put the sheets in this envelope, seal it, and drop it in this box. I shall return in about five minutes."

When the examiner returned, he explained that the report which he had given the subject was used for experimental purposes and was not meaningful, and that the "anonymous" ratings were coded for identification purposes.

THE RESULTS

The mean and standard deviation of scores for the four experimental groups scored by the RHS and the Elizur RCT are listed in Table I. It may be observed from an examination of this table that the hostile-insightful group projected more hostility than the other groups as measured by both scales.

A *t* test was undertaken to test the significance of these differences. Since the hostile-insightful group variance was significantly greater than any of the other groups measured by the RHS ($P < .05$), the degrees of freedom were cut in half (d.f. = 19 instead of 38 (4 p. 170)). Even with this added restriction, an inspection of Table II indicates the hostile-insight-

ful group's hostility content as measured by RHS, to be significantly greater than any of the other three groups ($p < .01$). None of the other groups differ significantly from each other. Examining Table II with reference to RCT scores, one notes that only the hostile-insightful and friendly non-insightful groups show a difference in the predicated direction at the .05 level.

Hypothesis 1, "In a non ego-threatening situation, those persons who are hostile but possess insight into this fact will project a significantly greater amount of hostility on the Rorschach than those persons who are equally hostile but lack self insight," seems clearly demonstrated through the use of the RHS.

To test hypothesis 2, "Those individuals who are hostile but lack insight, will project more hostility as a result of ego-threat than those persons who are hostile and insightful, friendly and insightful, and friendly and non-insightful," an analysis of variance was undertaken with reference to the three variables, group ranking, self-ranking, and kind of interpretation received. The analysis was through a factorial design with three variables, each of which was varied independently of the other, in two ways. Thus there were eight experi-

TABLE I. Mean Score and Standard Deviation for each Experimental Group when scored for Rorschach Hostility Content by the RHS and RCT

Group	RHS		RCT	
	Mean	S.D.	Mean	S.D.
Friendly-insightful.....	11.10	6.07	5.55	2.28
Friendly non-insightful.....	12.05	6.93	4.95	3.35
Hostile-insightful.....	23.15	11.78	7.40	4.02
Hostile non-insightful.....	12.40	7.97	5.15	3.85

TABLE II. *t* Values between Groups of Rorschach Hostility Content as determined by the RHS, and the RCT (indicated in parentheses)

Group	Hostile-insightful	Hostile non-insightful	Friendly-insightful
Hostile non-insightful.....	3.29** (1.76)		
Friendly-insightful.....	3.96** (1.74)	.56 (.39)	
Friendly non-insightful.....	3.54** (2.04*)	.14 (.17)	.45 (.64)

* Significant at .05 level.

** Significant at .01 level.

TABLE III. Analysis of Variance of Projection Scores in Ego-threat Situation

Source of Variation	d.f.	Mean Square	F
Between Group Rankings.....	1	45.00	.84
Between Self-Rankings.....	1	.80	.01
Between Interpretations.....	1	1805.00	33.85**
Interaction: Group x Self.....	1	72.20	1.35
Interaction: Group x Interpretation.....	1	.80	.01
Interaction: Self x Interpretation.....	1	273.80	5.13*
Interaction: Group x Self x Interpretation.....	1	.80	.01
Within Groups.....	72	53.32	....

* Significant at .05 level.

** Significant at .01 level.

mental conditions, with 10 replications or subjects for each condition. Bartlett's test for homogeneity of variance yielded a chi-square of 10.162, which was not significant at the .05 level. Hence, any differences found in the analysis might be attributed to the differences in the means and not the variances.

The complete analysis of variance for the eight experimental conditions is shown in Table III. An examination of this table indicates that whether a person was hostile or friendly of itself, bore no significant relation to the elicitation of projection under ego-threat. Also, no significant differences were found between those persons whose self-concept was friendly and those whose self-concept was hostile. There is a significant difference well beyond the .01 level between those persons receiving

TABLE IV. Numerical Data Underlying Significant Interaction Between Interpretation and Self-Ranking*

Interpretation Given Subjects	Self-Ranking	
	Friendly	Hostile
Friendly.....	(a) 1758	(b) 1688
Hostile.....	(c) 1494	(d) 1572

* Numbers shown are sums of projection scores as a result of ego-threat. The lower the score the higher the projection.

a "friendly" interpretation of their Rorschach perceptions and those receiving a "hostile" one. This indicates that regardless of the group evaluation or self-concept, the majority of subjects tended to project under ego-threat.

The only significant interaction at the .05 level was between the self and type of interpretation. This finding indicated that differences noted in projection under ego-threat scores for

TABLE V. Standard Deviation, Mean, Projective Index, and *t* values for each Experimental Group

(The higher the score, the more favorably the examiner was rated on the Examiner Rating Sheet)

Group	Interpretation	S.D.	Mean	Projective Index (Mean Difference)	<i>t</i> (Mean Difference)
Friendly-insightful.....	Friendly	3.69	89.6	13.2	4.78*
	Hostile	7.41	76.4		
Hostile-insightful.....	Friendly	4.78	84.8	6.2	1.79
	Hostile	9.23	78.6		
Hostile non-insightful.....	Friendly	7.57	86.2	13.2	3.38*
	Hostile	8.96	73.0		
Friendly non-insightful.....	Friendly	7.45	84.0	5.4	1.53
	Hostile	7.55	78.6		

d.f. = 9 for Hostile-insightful and Friendly-insightful groups because of unequal variances.
d.f. = 18 for other groups.

* Significant beyond .01 level.

the different types of interpretation were a function of the self-ranking.

In order to examine the course of this significance more closely, a 2x2 table was constructed (Table IV) for the variables, self-ranking and type of interpretation. An examination of this table indicates that the greatest amount of projection (lowest score) was manifested by those subjects who considered themselves friendly (friendly-insightful and hostile non-insightful groups) but who received a hostile interpretation (group (c) in Table IV).

The projective index for each group, shown in Table V, was obtained by subtracting the mean score attributed to the interpreter by that half of each group receiving a hostile report, from the mean score given to him by the half receiving a friendly report. While all of the groups tended to project, Table V reveals that the projection scores of only two of the groups, the friendly-insightful and hostile non-insightful ones, reached significance beyond the .01 level. Hypothesis 2, therefore, was not confirmed.

DISCUSSION

In view of the results indicating confirmation of hypothesis 1 and rejection of hypothesis 2, further clarification of the concept of projection would be helpful if it is to be fruitfully employed in the description of personality functions.

Naive projection. According to the concept of "naive projection," those persons perceiving themselves as hostile (friendly non-insightful and hostile-insightful groups), should have projected more hostility than those persons perceiving themselves as friendly (friendly-insightful, hostile non-insightful groups). This expectation was not fulfilled. The friendly non-insightful group did not project a significantly greater amount of hostility on the Rorschach than the two groups in which the members per-

ceived themselves as friendly. Likewise, in the ego-threatening situation, the subjects considering themselves hostile did not project more hostility than those considering themselves friendly. Therefore, the concept of "naive" projection is seen to be inadequate as a means of dealing with the experimental results.

Rationalized projection. All subjects receiving a "hostile" interpretation should have reacted with feelings of anger and hostility. These feelings would then have been rationalized by saying that the anger was justified because of the incompetence of the examiner. Accordingly, the subjects would then have rated him quite low on the Examiner Rating Sheet. The results confirm this expectation in that *all* of the groups show at least a tendency towards projection. Specifically however, hostile-insightful subjects being more tolerant of their hostility should have projected to a greater degree than the hostile non-insightful group. Actually, the opposite occurred, in that the hostile non-insightful persons projected more hostility than the hostile-insightful ones. Moreover, the significant projection of the friendly-insightful group under ego-threat seems antithetical to the concept of "rationalized" projection, and indicates its inadequacy as an explanation of the occurrence of projection under ego-threat.

Classical projection. Holt (8) and Sargent (13) imply that the defenses of ego-defensive persons are not sufficient to prevent the expression of repressed materials when the subject is given a projective technique such as the TAT and the Rorschach, albeit the material may be disguised. According to Freudian theory, the denial of the possession of a trait should make the individual more prone to use projection as a defense mechanism than would be the case of persons possessing self-insight into an unfavorable trait. This did not occur on the Rorschach, in that, the hostile non-

insightful (ego-defensive) group did not project significantly more hostility than the other groups.

While it was possible to object to the employment of a projective test situation as a suitable test for the presence of "classical" projection, no such objection could be made for the employment of an ego-threatening situation. When told in the interpretation of their Rorschach responses that they were unfriendly and hostile, the hostile non-insightful persons projected hostility to a greater degree than either the hostile-insightful or friendly non-insightful groups. Freudian projection would seem a plausible explanation for this occurrence were it not for the behavior of the friendly-insightful group. This group projected quite as much hostility as the hostile non-insightful group.

The question might be raised as to whether the friendly-insightful group was actually projecting in response to a "hostile" report when they rated the examiner as incompetent. Were they not rightfully objecting to an inaccurate appraisal of themselves? This view does not appear justified, since the items of the Examiner Rating Sheet were based for the most part on the subjects reaction to the *manner* in which the interpretation was presented, rather than its *content*.

The results are unexplainable from the viewpoint of Freudian or "classical" projection. The friendly-insightful group cannot be said to have repressed. They were judged by their peers as being friendly. They considered themselves to be friendly. Still, they projected hostility.

The results are more amenable to analysis from a phenomenological frame of reference. Both the hostile non-insightful and friendly-insightful groups had one characteristic in common. In both groups, the members considered themselves friendly. Objectively speaking, the members of the friendly-insightful group were correct, the members of the hostile non-insightful group were in error. The ob-

jective circumstances were not crucial in this instance. What was important was the way in which each individual perceived himself. The experimental findings are consistent with the belief of Lecky (9), that "any value . . . which is inconsistent with the individual's valuation of himself cannot be assimilated; it meets with resistance and is likely, unless a general reorganization occurs, to be rejected (9, p. 153)."

The members of the friendly-insightful and hostile non-insightful groups who received a hostile interpretation found this report contradictory to their self-concept and they retaliated by perceiving the examiner as "the hostile one" (i.e., they perceived him as "cold, superficial, a clock watcher."). Apparently, the presence of an appropriate stimulus object, namely the examiner who gave the interpretation, acted as a spur for the manifestation of the mechanism of projection. In sum, "classical" projection is incomplete as an explanation of the behavior elicited under ego-threat, as well as being inadequate as an explanation of the hostility-content of the Rorschach protocols.

The concepts of "naive," "rationalized" and "classical" projection are therefore seen to be either incomplete or invalid, or, because of a lack of clarity and specificity, too crude for application to the two conditions examined within this study. Much of the contradictory evidence in experimental studies of projection may be laid to this lack of clarity and specificity. One may add that the difficulty in establishing a relationship between overt behavior and the material obtained through the use of projective techniques has arisen from lack of control of the aforementioned five important variables (p. 4) related to the manifestation of projection. The importance of these variables is indicated in the following conclusions which may be drawn from this study while noting the limitation

that the sample consisted solely of college fraternity men:

(1) Under a fairly non ego-threatening situation such as encountered on the Rorschach projection of hostility is dependent upon the *actual possession* and *self-acceptance* of the trait.

(2) A revision of thinking as regards the supposedly negative relationship between insight and projection is warranted. The hostile-insightful group, possessing self-insight, projected more hostility on the Rorschach than any of the other three groups. Under an ego-threatening situation, however, the hostile-insightful group projected less hostility than the hostile non-insightful group. The possession of insight therefore, is seen to be of itself an inaccurate gauge of the amount of projection elicited in a given situation.

(3) The situational quality of projection would seem to be clearly emphasized in that the hostile non-insightful subjects did not project hostility on the Rorschach, but did so as a result of strong ego-threat.

(4) The self-concept is of primary importance in determining the extent of projection under ego-threat. In a projective test situation it must be studied in conjunction with the objective characteristics of the subject in order to make accurate predictions.

(5) The sensitivity of the measure of projection may determine the conclusion as to whether projection has occurred. Measuring the same data, the RHS tapped significant instances of projection which the RCT failed to indicate, in spite of the fact that the two measures show a correlation of .84

In view of the above conclusions, a redefinition of the concept of projection seems necessary. One may speak of projection under non ego-threatening and ego-threatening conditions. A twofold definition is thereby offered:

Projection, Non Ego-Threatening Conditions. An individual tends to perceive the world in accordance with

his personal characteristics or "life style," provided that the perceptual environment does not threaten the self to such an extent as to cause denial of the percept on either a conscious or unconscious level.

Projection, Ego-Threatening Conditions. As a consequence of an ego-threatening situation, most persons tend to project negative traits ascribed to them on to others. This projective process is *more marked* for those who *deny* possession of the traits which they are said to possess than it is for those who are willing to accept such an evaluation. This mechanism is more or less independent of insight but is dependent upon the perceived threat to the self.

SUMMARY

An attempt was made to test some of the different concepts of projection used by workers in the field. Four groups of subjects were selected on the basis of whether they were hostile or friendly persons, and whether or not they possessed insight into this fact. They were tested for the projection of hostility on the Rorschach, and as a result of ego-threat. The important conclusions resulting were:

(1) The projection of hostility on the Rorschach is dependent upon the actual possession and self-acceptance of the trait.

(2) The possession of self-insight is of itself an inaccurate gauge of the amount of projection elicited in a given situation.

(3) The kind of projection elicited is a function of the situation in which projection is studied.

(4) The self-concept is of primary importance in determining the extent of projection under ego-threat.

(5) The sensitivity of the measure of projection may determine the conclusion as to whether or not projection has occurred.

An attempt to completely explain these conclusions through use of the concepts of "naive," "rationalized," and "classical" projection

failed. Therefore, a new definition of projection was offered for the kinds of projection operant within this study.

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APPENDIX A

Hostility Scale for Content of Rorschach (RHS)

General Considerations

A person's hostility score is the sum of the scores of all hostile perceptions on the Rorschach. It assumes strict comparability in number of responses between subjects. Generally speaking, as the perceptions move from abstract or vague expressions to more active,

violent ones, the point score increases.

1 Point

(a) Predatory animal or part of a predatory animal seen with no accompanying description. Examples: lion, tiger, gorilla, hyena, manta ray. Not bear or eagle, as these are too popular.

(b) An implement of destruction or of war or part of such an instrument, seen in a dormant state. Examples: tank, gun sawed in half, jet bomber.

(c) Something that is not ordinarily considered a weapon which is capable of piercing, cutting, crushing, or hammering kind of action, perceived in a dormant state. Examples: wire cutter, pliers, vise, ice tongs, hammer, sharp icicles, stalactites.

(d) Parts of the anatomy perceived which are capable of wrecking havoc. Examples: teeth, claws, pincers, horns.

(e) People or animals eating food.

2 Points

(a) Something not ordinarily considered a weapon seen in a piercing, crushing, squeezing or hammering kind of action. Examples: a stake hammered into ground; something gripped in a vise; acid seeping through metal; poison seeping.

(b) A finger pointing.

(c) A human or animal described as fierce, aggressive, dangerous, evil. Examples: boar rushing aggressively forward; evil-looking spider; fierce-looking hawk.

(d) Bisected animal; cut spinal cord; animal laid open; animal pinned. The implication is that the action has occurred in past and is somewhat impersonal. If the animal is given a name and is said to have just been injured or there is implication of injury, score as a wounded animal.

(e) Human or animal figures leering. The presence of an eye or eyes peering or watching.

(f) Explosion or fire without excessive accompanying description. Examples: volcano erupting with fire and smoke; remnants of an explosion; house on fire; match burning.

(g) Stained blots; paint splattered; ink splattered; big puddle. If constructive action is used to save response, do not score. For example, "looks like the paint a painter uses to wipe his brush with to try out new colors" is not scored.

(h) Some perception of people or animals in derogatory positions or shapes. Examples: begging people, gossiping women, prehistoric men, Martian monsters, monster with pointed head, court jester with elfin head.

(i) Lair of predatory animal; spider web; evil cobweb.

3 Points

(a) Human symbol being injured. Example: statue of man with head broken off.

(b) An unfavorable human characteristic. Examples: piano-legged fat lady, angry people, frowning people, stupid-looking people,

vicious, crazy, dumpy, etc. Old fat Germans. Fatness or skinniness, or baldness are not scored unless implication is derogatory.

(c) Implements of war exploding, or explosions or fire with excessive detail. Examples: cannon firing; volcano erupting, with molten lava pouring down; fire tearing through woods, hungrily eating up the timber.

(d) Any injury to an insect, including death. If implication is that insect has been dead for long time and is decayed, do not score. Examples of scorable responses: squashed insect, mangled butterfly.

(e) Dog howling or barking. If barking at object with vicious intent, score three points. If barking at nothing in particular, score two.

4 Points

(a) Two animals or humans in some competitive struggle but not fighting in anger. Examples: two bears vying for a piece of fish; two guys wrestling, boxing.

(b) Two or more people or animals angry at each other; may be seen as quarreling, but not taking action leading to violence.

(c) Impersonal conflict. Example: "The red reminds me of war." "This symbolizes conflict." If people are involved it becomes a fight and is scored five points.

(d) Blood. In any manner or description, this is scored at least four points. Examples: "Red reminds me of blood." "This looks like a bloody dissection." "This is blood dripping." (If the blood is connected with an animal or human injury, score five points.)

(e) Any animal which is committing some predatory action. Example: a lion stalking a deer.

(f) The following animals, which are considered symbols of predatory living: black-widow spider, praying mantis.

5 Points

(a) A wounded person or animal (not in-

sect). May be seen as shot, blood flowing, gashed, mangled, etc. An animal or human perceived merely as dead is not scored.

(b) Two or more humans or animals fighting, but not to the death, with no mention of injury or gore.

(c) Violence depicted without showing a personal causal element. Examples: woman with head cut off; man severed in two. If the perception is of a person without a head but there is no mention of injury, do not score at all. Example: woman with no head.

6 Points

Two or more animals in a gory struggle, with blood or injuries, and/or death occurring. Score 5 points for an animal seen as wounded without a description of a struggle.

7 Points

Two humans seen in hostile or destructive action toward each other, with death occurring, or blood flowing, etc.

Addenda

Critical remarks about the blots themselves are not scored. In the event that a response embodies two or more scorable aspects, only the highest is scored. Example: "A bloody dissection." Do not score 4 for blood and 2 for dissection. Score only highest value, which is blood (4).

In case of ambivalence or an attempt to vitiate the hostile implication of the perception, subtract 1 from what the hostile score would normally be. Exception: if the score would normally be one, the score remains one despite the vitiating remark. Examples: "This is either a rat or a wolf." (Score 1. Since this score is only one normally, nothing is subtracted despite the ambivalence.) "These people are killing each other, but it's only a movie we're seeing." (Score $7 - 1 = 6$.) "Either they're angry or they're dead." (Score $3 - 1 = 2$.)

Insight Test Prognosis in Successful and Unsuccessful Rehabilitation of the Blind¹

HELEN D. SARGENT, PH.D.

For the past four years, the Insight Test has been in use at the Kansas Rehabilitation Center for the Adult Blind, as one of a battery of tests used in evaluating the personality, learning ability, and adjustment potential of blind persons undergoing pre-vocational diagnosis and training at the center. The aim of this study has been to examine the available data as a check upon assumptions made in interpreting the IT results for rehabilitation clients, and to generate additional hypotheses concerning test characteristics associated with good or poor training prognosis. Although a variety of services adapted to the needs of individuals are available through state agencies for the blind, the development of specialized and intensive programs for maximum individual benefit according to capacity, requires selection and evaluation of clients on the basis of potential, as well as of need.

The Insight Test

The Insight Test, although originally developed for use with sighted persons, has proved to be a useful projective technique for administration to the blind, for the reason that it utilizes, unlike the Rorschach and TAT, verbal rather than visual stimuli.² Among available verbal

techniques, such as sentence completion, story methods, and questionnaires, the IT elicits rich material which lends itself to formal as well as content analysis (4). The test is composed of common problem situations, in which the fictional characters are minimally described in order to permit projection, and to each of which the subject is asked to answer two questions: "What did he (she) do and why?" and "How did he (she) feel?" Because the task-set demands a problem solution and, simultaneously, an appropriate affective response, the material elicited affords an opportunity to observe and analyze the processes of thought and affect in dynamic interaction. The test interpretation lends itself, therefore, to inference about ego organization and function.

The following excerpt from an Insight Test report on a young Rehabilitation Center client, a bookkeeper unable to continue his vocation because of progressive blindness, will serve as illustration. The formal scores derived from a classification of certain modes of expressing and controlling feeling response resemble closely the patterns obtained by obsessive compulsive patients. Test inferences regarding problems and attitudes relevant to rehabilitation are based also on thematic analysis of content.

"The Insight Test results describe an individual who has a firmly entrenched system of intellectualizing defenses which serve quite adequately to allay anxiety; in fact, anxiety is so firmly held in check that it does not emerge in consciousness with sufficient

ect has not been designed for a direct check upon differences between oral and written protocols, but to the extent that expectancies based on previous findings are confirmed or refuted, results may be considered relevant.

¹This study was made possible by a grant from the American Foundation for the Blind, which is gratefully acknowledged.

²Sighted subjects are presented with the test armatures to read, and ordinarily are asked to respond in writing. Of interest in the present study is the question of comparability between oral and written protocols. Preliminary results from experiments designed to test comparability suggest corrections for level of quantitative scores, but indicate that over-all inferences are not markedly influenced by the method of administration and response. The present proj-

strength to serve its 'signal' function nor to create enough tension to serve as motivation for change. Typically, when the client is uneasy and unsure of himself, he becomes cautious and obsessive. On the test, for example, his response to the first question (about the problem of a young man whose mother, after the father's death, asks him to return home) was:

"There are any number of things he might do.' After asking some further questions, he replies cautiously: 'I have known some people who would go home. I have known some people who would not. I have known some people who would go home for a few days and until after the funeral and maybe wait for a few weeks and then go back to school and the latter would be the one I think would be the most common, and the one that I feel would probably be the best in most circumstances. But I don't quite get the point.'

"Although the obsessional tendency continues to appear in subsequent responses in a characteristic offering of alternatives (such people see at least two sides to every question); uncertainty diminishes as he begins to feel less threatened by the examiner and the test. As his intellectualizing magic begins to take effect, disturbing affect comes under control and it appears that there are no problems that cannot comfortably be solved by a system of objective weighing of pros and cons. His solution, for example, to the problem of the husband whose wife wants to work is that they should:

"... get together and write down in one column the reasons she should continue working and in another column the reasons she should stop working, weigh the two answers to try to come to a conclusion which would be best in this particular case. It may take a long time but if they are both sincere, I believe that they can come to a conclusion that would work out well for both.'

"The problem of a handicap is worked in the same conventional and rather glib way:

"Everybody has a handicap of some kind. Many people have handicaps lots worse than poor eye sight. Many have handicaps not quite as bad but all have handicaps and if a man don't get one job because he has poor eye sight then I believe he should go to an authority on employment or some place to work that a man with poor eye sight can do (words lost) of the possibilities and find out what he likes best and assume the most pleasant and confident manner he can, and start knocking on

doors again. He knows that he isn't going to get a job if he doesn't try.'"

On the basis of the test findings, it was decided not to force routine rehabilitation procedures upon this client at the present time. His presence at the Center had been instigated by others; blindness had not progressed to the stage at which the client was willing to accept the reality of his handicap. It was felt that more help could be given at a later stage, after a sufficient mobilization of anxiety to provide motivation.

In other instances, of course, the exact opposite is found; that is, a client who presents a bland and indifferent front is discovered to be ridden with inner turmoil and strong desire for change. An example of this kind was reported in the chapter on Bland Rehabilitation Clients in *The Insight Test* (4).

The Research Setting

The Kansas Rehabilitation Center is ideal in many ways for the study of evaluation procedures. Within its overall purpose to teach techniques and attitudes for more comfortable and effective living as a blind person, the philosophy is whole-person-adjustment oriented, and training is individualized rather than standardized. Blindness is regarded as a common denominator which brings together a varied group of persons of both sexes, differing widely in intelligence, character structure, socio-economic status, and age. Because experience has shown that learning and change take place only within the context of the personal capacities and adaptive problems of the individual, careful diagnosis (in the sense of a plan for action, subject to constant revision) is made initially. During training, extensive records are maintained in keeping with the working assumption that the staff has much to learn from clients as well as clients from staff. The training itself (which usually runs three months, but may be extended) includes psychiatric and psy-

chological consultation, individual psychotherapy when needed, and personal-vocational counseling for all clients in addition to the regular curriculum of occupational therapy, shop work, Braille, typing, travel training, and personal hygiene, together with pre-vocational skill try-out and practice. Data are available, therefore, not only for thorough review and re-evaluation when training is completed, but for research use as well.

Natural setting investigations which make use of data gathered as a by-product of an ongoing program of treatment or training, rather than for research as such, impose problems of design which must often be of the post-audit type. At the exploratory stage, however, there are advantages in closeness to clinical reality unaltered by experimentally induced conditions, which offset the difficulties of control and the limitations of sample size. The small, intensively studied sample provides not merely for the more detailed analysis of trends which support or reverse anticipation, but permit the emergence of hitherto overlooked factors leading to hypothesis revision (5).

Hypotheses

Our assumption has been that impressions of personality derived from the IT productions would agree with staff judgments, based on contact outside the testing situation, in discriminating between clients of greater or lesser adaptive capacity.³ It was further hypothesized that certain IT patterns would distinguish the more

successful clients as follows:⁴

1. Higher affect total (A) and manifest feeling proportion (*m*) reflecting greater drive and affective spontaneity.
2. Excess of latent feeling proportion (*la*) over feeling expressed in action (*a*), indicating better impulse control.
3. Lower defense scores in relation to affect scores (High A/D ratio) showing lesser defense mobilization.
4. Higher affect score, more even balance between affect and defense, higher proportion of latent feeling (higher A, A/D, *la*) indicating greater anxiety tolerance.
5. Lower proportion of scores in elaboration and evaluation (*Ev*, *El*) reflecting moralistic, rigid, and unrealistic modes of handling anxiety.
6. Low incidence, or absence, of first-person pronouns (PP), associated with less egocentricity, more adequate self-boundary and object relations.

Subjects

The sample used was too small and too varied to permit systematic control or randomization of such probably relevant factors as intelligence, age, education, and degree and duration of blindness. Table I shows the diversity of these data for the subjects utilized. As far as personality organization is concerned, the handicap of blindness is only one of many determinants, and is experienced and handled differently by individuals who are as unlike each other as are people without disabilities. On the other hand, there are factors making for homogeneity in the sample. A group referred for rehabilitation shares at least the common denominator of being a problem group or, better stated, a group of people with problems, who are sharing a new, crucial, and to a greater or lesser extent, according to the individual, an anxiety-provoking experience, as well as a similar handicap. Furthermore, although emotionally disturbed persons may appear in the

³In the absence of valid criteria for what characterizes a successful or potentially successful blind person, hypotheses can be stated only in terms of predicted relations between test inferences and a general concept of "adjustment" which itself is then subjected to scrutiny in the light of results. Elsewhere the writer has discussed levels of inference in diagnostic research (4) and the hierarchy of hypothesis formation and method in clinical research (5).

⁴The derivation and interpretation of the scores listed have been presented elsewhere (4).

TABLE I—Data for 27 Blind Rehabilitation Clients

Subject Number	Age	Sex	Education	Degree blind	Years duration of blindness	IQ*
1	20	M	12	total	life	95
2	39	M	13	light	life	121
3	20	M	12	total	16	131
4	38	M	7	total	8	94
5	30	M	16	light	1	Sup. (est.)
6	36	M	9	total	4	
7	32	M	12	light	8	122
8	37	F	12	total	life	114
9	36	M	8	travel	life	105
10	35	M	12	light	11	109
11	48	M	14	light	26	101
12	58	M	8	light	4	98
13	19	M	12	light	8	123
14	22	M	4	travel	life	101
15	17	F	12	total	life	76
16	32	M	12	total	19	not available
17	41	M	12	light	1	
18	42	M	13	travel	life	111
19	30	M	9	total	life	135
20	27	M	12	total	life	114
21	20	M	12	total	1	124
22	20	F	14	total	life	112
23	31	F	12	total	life	123
24	44	M	11	total	10	131
25	42	M	8	light	9	111
26	19	F	12	light	10	132
27	41	M	11	total	life	126
				light	10	113

*Wechsler Bellevue Verbal Scale

Range	17-58	4-14		
Mean	32.4	11.1	Life to —1	76-135
S.D.	10.3	2.5		113.8
A.D.	8.5	1.9		13.9
				11.1

group, from the standpoint of personality deviation the extreme contrasts found between severely ill hospitalized patients and nonhospital subjects are not to be anticipated.

The 27 clients whose ITs (administered early in the training period) and records were utilized in the study included all who met certain practical criteria. The group may, therefore, be regarded as a random sample from the total Center clientele with respect to other variables. Criteria for inclusion were as follows: (1) availability of a full scorable IT protocol; (2) completion of training before the writer became consultant, to make possible interpretation independent of personal contact with the client; (3) knowledge of the client by not less than three staff members who had participated in his training, and who

felt competent in comparing him with others; and (4) knowledge by the staff rater of enough other subjects to permit comparison of each client with at least eight others by an adaptation of the method of paired comparisons.

PROCEDURE

Insight Test Analysis

The 27 IT protocols were scored and interpreted by the writer by the standard method,⁵ prior to the collection of ratings and study of the case record. The only change in the test scoring as previously described (4) was the following refinement in the PP score. The first person pronoun is

⁵Data on the reliability of scoring have been presented elsewhere (4). The relative unreliability of scoring projective tests is a disadvantage in research studies although in clinical use complete objectivity as ordinarily defined is of doubtful benefit (5).

prominent in the written records of disturbed persons (4), but its meaning has been interpreted with caution in tests orally administered, on the assumption that its appearance may be more natural, hence less significant, in oral, interpersonal communication. For this reason, its occurrence was subjected to an additional break-down according to occurrence in the following types of response:

Interjection: side conversation with the examiner, not related to test questions.

Qualification: "I think he would . . . " "I imagine . . . "

Personal reference: "If I were he, I would . . . "

Subjective statements: "That happened to me, and what I did was . . . "

Opinion: "In my opinion he should . . . "

Distant: "I told her I would . . . " (loss of distinction between the fictional character and the self; rare except in psychosis).

In addition to the formal scoring, an over-all "blind" prediction was made from the IT as to whether the subject would fall above or below the median adjustment rating of the group. These predictions were made by a rapid, intuitive method based upon an appraisal of the total score pattern, supplemented (as in the clinical use of the test) by clues and "feel" from the qualitative impression of the protocol in its entirety.

Criterion ratings

The criteria of "good" and "poor" adjustment, against which to check the overall IT prognosis and the direction of major scores, were derived as follows:

Five staff raters were used: the chief instructor at the Center, a former chief instructor now working in the field as home teacher, the occupational therapist, adjunctive therapist, and shop instructor. Four lists were prepared for paired comparisons in such a way that each client was compared by three judges with not less than eight other clients known to the same judge, resulting in at least 21 judgments per client. Lists were ad-

ministered orally to all raters, two of whom were blind.⁶

Lists were presented to each rater twice, on separate occasions. On the first run, the rater was instructed: "Choose in each pair of subjects the one who, in your opinion, came to the Center with the most assets for rehabilitation." At the second administration, judges were told: "Choose in each pair the one who, in your opinion, made the most progress from the level at which his training was begun." To each judge the point was clarified that a given client, at the beginning and end of training, might stand lower than another in total adjustment, but might be said to have gained more than one who came with many assets, but developed little in the course of training.

On the basis of the above staff choices, each client was assigned two quantitative scores; (1) an initial rating representing the percentage of times chosen first in all pairs by all raters (number of choices divided by total number of comparisons) and (2) a progress rating similarly computed.

To supplement the quantitative criteria of good and poor adjustment obtained by the paired comparison technique, full case records were read and further information on rater values and on characteristics of individual clients was obtained in follow-up interviews. Raters were asked to formulate the basis on which they habitually rely in making judgments of aptitude for rehabilitation, and on extent of gain. In addition, free statements were solicited in response to two questions about each subject: (1) What sort of individual was the client? (2) In what way did he benefit, if at all, from his training?

Reliability of Criteria

Rank order correlations between rat-

⁶Lists were arranged in the usual manner so that appearance as first or last in a pair was randomized, no name appearing in consecutive pairs.

TABLE II—Rank Order Correlations Between Raters on Paired Comparative Judgments on Initial and Progress Criteria

Criterion:	A		B		Raters C		D		E	
	I	P	I	P	I	P	I	P	I	P
Raters										
B	.69	.71								
C	.90	.67	.80	.61						
D	.50	1.00	.97	-.20	.77	.35				
E	.76	.64	.85	.58	*	*	*	*		
Rater										
average	.712	.755	.827	.425	.823	.543	.723	.383	.805	.610

*Rater E rated no clients rated by Rater C or Rater D.

ings were computed for each judge paired with every other on both Initial and Progress ratings (see Table II). It will be noted that there was much closer agreement on Initial ratings (Rhos .50 to .97) than on Progress rating (Rhos -.20 to 1.00) although all, except the correlation between one pair of raters, are positive and substantial considering the qualitative nature of such judgment. The discrepancy between these two raters (based on ratings of eight clients known in common) appears, from an examination of the data, to arise chiefly from disagreement on two subjects, both of whom were given high Initial ratings by one of the judges who, as a consequence, chose these subjects less frequently when using the Progress criterion.⁷

Criterion comparisons

Subjects were assigned successively to five high and low criterion groups according to three quantitative measures derived from the comparative ranks, and from two additional qualitative criteria as follows:

1. *Initial*: 10 high versus 10 low clients according to ranks on initial adjustment status.
2. *Progress*: 10 high versus 10 low clients according to ranks on amount of progress during training.
3. *Combined*: 7 high versus 7 low subjects

⁷In general it should be noted that the lesser agreement between the Progress ratings reflects not so much disagreement as to final adjustment status, as with regard to the Center's contribution to the client's final achievement.

appearing in both the Initial and Progress criterion groups.

4. *Gain-No Gain*: 17 subjects for whom specific examples of improvement were volunteered in the staff interviews, contrasted with 10 for whom no statement of benefit was made.
5. *Asset-No Asset*: 15 subjects for whom favorable personality traits were spontaneously described, versus 12 for whom such statements were absent.

All five of the contrasted groups above are overlapping, although none are composed all of the same subjects.⁸ Especially close is the relationship between the Gain-No Gain and Progress comparisons. The Gain-No Gain grouping includes all subjects in the sample, rather than the ten high and ten low, and is based on staff statements in the post-rating interviews rather than upon relative rating status. The qualitative criterion was introduced to supplement the Progress

⁸The use of these several overlapping criteria and various methods of comparison is dictated by the intent to avoid what statisticians call "the error of second kind," overlooking possibly significant trends (1). It would seem that the "error of the first kind" (claiming significance where none exists) could hardly be committed in an exploratory study modestly aimed at hypothesis-testing rather than hypothesis-verification. The advantage of distribution-free statistics is that, although they do not magically convey significance in samples too small for parametric analysis, they are not dependent upon assumptions of normality, and permit quantitative evaluation of trends in the sample at hand. Since our aim was not, at this stage, to establish generalizations about the "population at large" but to derive all possible implications for further study from the data available, no clue has seemed too tiny for scrutiny.

rating in order to correct for the difficulty which raters apparently had in isolating improvement, as such, from global impressions of the client's adjustment, both potential and realized. It should also be noted that the Gain-No Gain and the Asset-No Asset dimensions cross-cut each other (see Table III). In the absence of formal psychiatric diagnosis (except for a few clients) the most convenient and objective, though crude, criterion for dividing subjects into more or less emotionally healthy groups was the staff statements indicating the presence or absence of personal characteristics implying capacity for growth and adaptation.

RESULTS

Overall IT prognosis

Consistent agreement of the overall IT judgment with placement in the various criterion groups is shown in Table IV. In selecting those clients who would appear as members of the high groups on one or both of the quantitative Initial and Progress ratings, the overall measure discriminated at the 1 per cent level of confidence.

Single score comparisons

The Mann-Whitney U test (2) and the Median test (3) were used to determine the significance of the differences

between criterion groups in predicting directions of the IT scores for the high-low criterion groups. Chi square (corrected for small frequencies) was used to test the null hypothesis for differences on the qualitative, whole-sample criteria. Differences reaching the 10 per cent level of confidence were found in only a small proportion of tests applied. The only findings which can be attributed to factors other than chance, with a probability of .05 or better, are a significant excess of *feeling in action* (*a*) in the low groups on the Initial, Progress, Combined and No-Gain criteria; the excess of first-person pronouns (*PP*) in the low group on the Initial and Gain-No Gain ratings; *manifest feeling* (*m*) excess for the Initial highs; and the higher proportion of *latent feeling* (*la*) in the Gain group. Differences in evaluative or judgmental (*Ev*) responses favoring the Gain group; in elaborative (*El*) responses, and in the total affect (*A*) score favoring the No-Gain group, approach significance (25 percent level).

The total *PP* score consistently discriminated between high and low groups, though not significantly, except on the Initial and Gain criteria. More of the low subjects, however, produced all kinds of *PP*. *Interjection* significantly distinguishes between the high and low subjects in both the Initial and Combined ratings, suggesting that disturbed individuals have most need to establish a reassuring relationship with the examiner. *PP* in *expression of opinion* varies. More members of the low group have this sign, but when it occurs in the high subjects, the amount is more excessive.

TABLE III—Distribution of
27 Subjects by Staff Judgments
on Gains and Assets.

	Gain	No Gain	Total
Asset	13	2	15
No Asset	4	8	12
Total	17	10	27

TABLE IV—Agreement of Overall IT Prediction (Above or Below Median)
With Criterion Ratings

Criterion	Agreeing judgments	Chi square	P <
Initial H-L	19	4.48	.02 - .05
Progress H-L	20	6.24	.01 - .02
Combined H-L	17	1.80	.10 - .20
Gain No-Gain	18	3.00	.10
Initial and/or Progress H-L	23	13.26	.01

Only a trend toward greater frequency of personal and subjective PP appears in the low groups, but larger amounts are consistently produced by low subjects. Finally, it is important to note that all of the subjects designated as psychotic produced excessive PP of one kind or another.

The directions of all score trends, whether or not these reach statistical significance, are also indicated in Table V. The clearest and most nearly significant differences for all IT scores are brought out when the Gain and No-Gain groups are compared. In contrast, the Asset-No Asset criterion grouping shows little if any relationship to IT scores, suggesting that this criterion was of little value.

Criterion Analysis

The nature of the *criteria of adjustment* used by the raters may be summarized, on the basis of the interviews, as follows: There was general agreement upon such factors as motivation, striving for independence, initiative, interest in and ability to get along with others, as factors in success. Mentioned also were cooperativeness, willingness to take instruction, sense of humor, and ability to relax tension. Intelligence was regarded as an asset, also, but was not accorded high priority.

The Client Group

In the staff follow-up interviews, un-

favorable traits were described for all of the subjects, whereas assets were spontaneously mentioned for only 15 of the client group. Disadvantages were described in terms ranging from "tense," "insecure," and "depressed" to designations referring to mental disorders such as "psychotic," "paranoid," and the like. Of the two subjects who, in spite of assets, were thought not to have gained (see Table III), one was described as getting along well with others, but as "somewhat rigid," the other as intelligent and friendly but "lacking in drive." In the four who gained in spite of classification in the No-Asset group, improvement was attributed to an increase in some specific skill, such as travel, or to ability to control some socially undesirable behavior, rather than to attitude change. For the remaining 13 subjects in the Gain group, only the less extreme personality detriments were mentioned. Of the eight No-Gain, No-Asset subjects, five carried a psychiatric diagnosis of psychosis in remission. A sixth was believed by the Center psychiatrist to be on the verge of a psychotic break. Of the remaining two, one had organic brain damage, and the other was described as "rigid," "hostile," and "malicious."

The Rehabilitation Center is called upon most often to accept the individual whose problems of adjustment are more severe than the problems

TABLE V—Insight Test Score Trends for Criterion Groupings*

Score	High-Low Initial	High-Low Progress	High-Low Combined	Gain No-Gain	Asset No-Asset
A	(H) H	(H) H	(H) H	(G) G .10	(A) A
D	(O) H	(O) H	(O) H	(O) O	(A) O
A/D	(H) L	(H) H	(H) O	(G) O	(A) A
a	(L) L .05	(L) L .02	(L) L .05	(NG) NG .01	(NA) NA
m	(H) H .05	(H) H	(H) H	(G) O	(A) A
la	(H) L	(H) H	(H) H	(G) G .05	(A) A
Ev	(L) H .05	(L) H	(L) H	(NG) G .10	(O) NA
El	(L) O	(L) L	(L) L	(NG) NG .10	(NA) O
Q	(H) L	(H) O	(H) O	(G) G .10	(A) A
PP	(L) L .01	(L) L	(L) L	(NG) NG .05	(NA) O

*Letters in parenthesis refer to group for which scores excess was predicted. Unparenthesized letters designate obtained excess groups. Figures indicate chance probabilities for obtained difference. Differences not significant at the 25 percent level of confidence have been regarded as not distinguishing, and are represented by "O" (zero).

TABLE VI—Comparison of Obtained IT Scores with Reference Population

IT Score	Average Obtained	Expected*	Comparison
A	36	36-64	-1 sigma (low)
D	61	36-64	+1 sigma (high)
A/D	63	80-100	Below -1 sigma (low— hospital mean)
a proportion	11	30	High (+11) average
m proportion	33	40	Low (-7)
la proportion	21	30	Low average (-6)
Ev proportion	21	14	High (+10)
El proportion	22	17	High average (+5)
Q proportion	57	69	Low average (-12)
P frequency	9.5	0	High

*For expectancy norms for reference population see (4).

encountered in blind persons who need no help, or who are able to make use of less intensive assistance. However, the unfavorable description of the Center population studied may also be a function of the critical attitude necessarily adopted by persons whose goal is to induce changes in others. It need not be assumed, therefore, that the 12 clients for whom no assets were listed had none at all! In spite of this consideration, the client groups as described by the Insight Test, as well as by the staff judgments, appears skewed in the pathological direction. In terms of the tentative norms for the test (4) the mean *A* score is close to -1 sigma in the reference distribution (4), where *D* is close to +1 sigma and *A/D* is near to the mean for hospitalized patients. The subscore deviations for the group as a whole show the pattern plus *a*, plus *El*, minus *Ev*, and minus *Q*, which is characteristic for patient groups (4), with the notable exception of the *Ev* trend (See Table V).

The five psychotic patients were readily identified on the basis of the IT. All five earned minus ratings on the overall prognostic score, all had double plus *a* proportion, four of the five had excessive *PP*, four of the five had low *A*, and four of the five had plus *D*.

DISCUSSION

The above results emphasize the advantage of an integrative over a diagnostic-sign approach to the inter-

pretation of test data, which is familiar in clinical practice. Research-wise, however, it is necessary to deal with the paradox that, although diagnostic indicators, as such, discriminate poorly (except in high contrast research group comparisons), in individual case study, interpretations which rest heavily upon such indicators may be capable of quite fine discrimination which can be clinically verified. A partial explanation lies in the interchangeability of test signs as determinants of inference, (the many genotypes underlying the phenotypes) and in the imbeddedness of single indicators in complexes made up of multiple factors which (depending on patterning) may negate or magnify the implication of a sign.

The quantitative summary of results may serve best as a kind of optic analyzer to bring into focus unclear areas for more microscopic study, within the context of the major questions raised: (1) whether the findings support or refute interpretive assumptions based on previous data for sighted subjects and (2) whether new relationships and limitations upon interpretation are suggested.

A Score Comparisons

Although the *A* score, which is associated with strength of drive and emotional spontaneity, does not clearly differentiate the High, Gain, and Asset groups from their opposites, the trend is in the predicted direction. It should be noted, also, that the pre-

dictions made did not take into account the fact that although emotional health includes affective resource freely available (as represented by *A*), ego requisites which the score does not reflect are also essential for effective adjustment. Examination of staff comments about clients, in whom the reverse trends were found, shows the following: Subjects rated high in one or more of the good adjustment criterion groups who had low *A* were consistently described as having "good exterior;" an observation which obviously influenced the ratings. S-18, for example, was a former professional man, described as having an excellent facade but as being in a state of disorganization and conflict at the beginning of rehabilitation (a "sick character" as one staff rater put it) but able to reconstitute his defenses and to benefit somewhat from training. S-10 was characterized as having "not much drive, though he cooperated well." Of S-13 it was said that he showed "good facade, but some kind of character disorder." S-20 was regarded as "aggressive outwardly but basically dependent." Reversal in the other direction (high *A* among low rated subjects) occurred in four clients. Three were described as obsessive compulsive by the psychiatrist; the fourth was the only subject to rise from the low group on the Initial rating to high on the Progress criterion.

Examination of the individual cases suggests that the *A* score may be somewhat more sensitive than ratings to certain intrapsychic differences between clients, and that these differences are in the direction which would be assumed according to the interpretation of affective production on the IT. However, the frequency of high *A* among the less well adjusted clients emphasizes the danger of interpreting *A* elevation as a sign of strength without considering the quality of affect and its management, as indicated in other aspects of the total pattern.

Of the *A* subscores, the feeling-in-

action proportion (*a*) distinguishes the poorly adjusted subjects, regardless of the criterion used, more consistently and significantly than any other factor on the test. There is also a consistent trend to more manifest feeling expression among the better adjusted subjects, although the results are not statistically significant. As in the case of the total *A* score, the significance of *m* depends on context.

D Score Comparisons

The *D* (defense) score, a composite of three subscores (elaboration, *El*; evaluative and judgmental statements, *Ev*; and qualification, *Q*), was unexpectedly high in the better adjusted subjects by all five criteria.⁹ It is of some interest to note that of seven who lost status from the Initial to the Progress rating, five had high *D* derived largely from *El*, suggesting overactive fantasy and an imbalance in the direction of impaired reality testing theoretically sufficient to have interfered with learning. Of more importance, however, is the fact that a clear reversal of the expected direction of *Ev* also contributes to the *D* score excess in the high group. According to previous experience, the *Ev* score (applied to moralizing and judging) is more often produced by emotionally ill persons. This reversal cannot be explained (as in the case of the *El* score) on the basis of initial impressions corrected on the Progress rating, nor is there any evidence, as in the case of the *A* score discussed above, that the interaction of *Ev* with other factors acted to obscure and reduce a trend in the expected direction. All three of the subjects in the Initial high groups, whose ranks within that group improved from the Initial to the Progress rating, obtained plus *Ev* scores, and four of five who lost standing were low on this factor. The con-

⁹Previous findings have indicated that the *D* score distinguishes the more disturbed patients only when high in proportion to *A*, but not in terms of its own absolute quantity.

sistency of these results by all criteria appears to be a clear indication that the interpretation of the *Ev* score requires revision, at least as applied to the group of blind persons whose tests were analyzed.

According to the rationale for the IT, the overproduction of judgmental statements in the records of neurotic individuals represents rigidity, guilt feeling, and over-active, poorly integrated superego function. Several explanations of the results obtained in this sample of blind rehabilitation clients are possible. Perhaps the most obvious might be that the *Ev* score, since it is high for better adjusted clients, does not have the significance previously attributed to it, and hence requires a revision of the assumptions which have been made about its meaning. It is also possible, however, that the high proportion of *Ev* scores in clients regarded as better adjusted, and as benefiting more from training, is a function of rater values; that is, that the client who verbally "knows the answers," and who expresses the desirable attitudes, might be regarded more favorably by rehabilitation workers than the one who does not. A third possibility is that adjustment to a severe handicap, such as blindness, actually does demand a more conscious and deliberate, and more intellectualized emphasis on rules of behavior and conduct. Possibly this habitual attitude is reflected in the high *Ev* score for the group observed. The data from the present study are not adequate to determine which explanation may be correct.

The A/D Ratio

The balance between affective and defensive response on the IT is obviously a function of trends in both components of the A/D ratio. Previous findings have, however, supported the assumption that the ratio distinguishes between more and less severely ill individuals, regardless of the component level of the A and D scores. In the

present study, the A/D ratio did not significantly distinguish between good and poor groups, and even a trend in the predicted direction appeared only on the Progress rating and in the Asset-No Asset comparison. A further breakdown of the high and low A/D groups into those having high and low A levels results as follows:

Of subjects scoring high on A/D in the high group, only one had a low A level; and of the low subjects the only one who had high A/D, with high A also, was the client previously mentioned who moved from the low group on the Initial rating to the high on Progress, suggesting that this client possessed a greater potential for adjustment than appeared upon first observation. The two highest A/D scores for the entire sample were obtained, one by a low subject and one by a high. Of the two, the high subject whose A/D was high had relatively higher levels of both components, but both subjects were described as showing obsessive tendencies. Regardless of what the significance of the A/D continuum may be, by itself, in distinguishing between persons who fall at the extreme poles of a health-sickness continuum, it appears risky to regard a high A/D ratio, when both components are low, as a favorable prognostic indication for success in training.

Malignancy indicators

The fact that expressions designated as subjective (Sj) and inappropriate (Ir) appeared only in the records of the more obviously disturbed clients, and with frequencies too low to tabulate, is in line with expectation, not only from the IT but for any verbal output in which peculiarities of thought and logic are the pathognomonic systems of serious disorganization. The greater preponderance of the first-person pronoun in the productions of the less well adjusted clients also supports the pathological significance which has been attributed

to the sign in earlier research. The fact that the distinction is less marked than in previous studies, may be attributed to the lesser contrast between groups compared and, since excessive *PP* appears in both the high and low groups, to interpersonal factors in the oral test situation. These factors, apparently, do not operate differentially according to kinds of expression in which the "I" and "me" appear but, in the study of individuals, it is obviously important to consider context and situational factors.

SUMMARY AND CONCLUSIONS

The purpose of this study has been to learn more about aspects of the IT which can be used to distinguish between clients who are capable of benefiting from rehabilitation and those who, because of personal and emotional handicaps, were unsuccessful.

An adaptation of the classic Fechnerian method of paired comparison proved to be a useful device for quantifying subjective judgment. Interpretations derived from the IT productions of 27 blind clients of a rehabilitation agency, including an overall prognostic judgment, and the direction of quantitative scores, have been compared with staff judgments on initial adjustment status, progress in training, and personal characteristics. Quantitative comparisons have been made between clients assigned to contrasting groups according to three quantitative and two qualitative criteria.

Both the heterogeneity and homogeneity of the Center population place stringent demands upon the capacity of any test to discriminate between segments of the group with respect to admittedly vague criteria such as "adjusted," or "maladjusted," as having "progressed," or "failed to progress," in training.

An overall estimate from the IT agreed significantly with the staff judgments in assigning subjects to

good or poor criterion groups. The feeling-in-action (*a*) score (associated with poor impulse control) consistently discriminated, beyond chance expectancy, the less well adjusted subjects according to all criteria. Other single scores did not differentiate the groups at statistically satisfactory levels of confidence. Separate score trends, especially when analyzed in the individual context, were in the direction anticipated according to the test rationale, with the exception of the evaluation (*Ev*) score which requires reinterpretation as applied to the oral productions of the blind subjects used in this study. Previous research has suggested that the judgmental response is characteristic of rigidly and poorly integrated super ego function (4). In the present study it appears consistently more frequently in the protocols of the better adjusted subjects. Further research is suggested to test the hypothesis that a high proportion of judgmental statements may be characteristic of the IT protocols of blind persons rated by staff as exteriorly successful and well-adjusted, and to explain to what extent this fact may be attributed to criteria of "adjustment," or may represent an attitude which adaptation to a handicap tends to require. It is proposed, for example, that leveling effects which have been postulated as factors which perhaps obscured A and A/D differences between successful and unsuccessful clients, as well as the reverse trend in the *Ev* scores, be investigated in a factorial design in which paired clients of equivalent age and intelligence would be selected to fulfill prescribed contrasting status with reference to specific judgments on such variables as exterior adjustment, strength of motivation, and degree of pathological disturbance evaluated by a psychiatrist.

The results suggest that the Insight Test is a potentially useful clinical device for selecting, among the blind, those who are personally best

equipped to benefit from rehabilitation. The quantitative findings reaffirm, also, the danger of relying, at this stage of knowledge, on any single dimension of test analysis without considering configuration. As an aid to clinical judgment, scores are useful, but as a substitute for it, they can be dangerously misleading. Some factors which have bearing upon the interpretation of the major IT scoring variables have been suggested and deserve further study.

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A Note on the Use of Fine's Scoring System with the MAPS Tests of Children

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The purpose of this paper is to report some findings on the use of Fine's scoring system (1,2) using the MAPS test (4, 5) with children. Specifically, the subjects were 64 children, who were seen at an Army hospital outpatient child-guidance clinic over a three year period. There were 41 boys and 23 girls in ages ranging from 3-6 to 16. All but 7 of these 64 children, however, were between 6 and 13. The referring problems for these children were as follows: conversion, disciplinary, enuresis, general behavior, headaches, organic brain damage, reading difficulty, sexual transgressions, school retardation, speech difficulties and stuttering, temper tantrums, and social withdrawal. Each child was given a diagnostic battery of tests, of which the MAPS test results will be discussed here.

The number of MAPS test backgrounds in each protocol varied from two to twelve, with an average of eight. The tests were given by twelve different examiners over a period of three years. The 64 protocols were independently scored according to Fine's scoring scheme for verbal projective techniques (2) by nine judges.¹ Reliability of scoring was no lower than .90 for each of Fine's categories, as derived by the method discussed in a previous publication (6). This degree of agreement compares favorably with those reported by Fine (2) and Lessa and Spiegelman (3) for other verbal projective techniques and with other populations. Such consistency of agree-

ment indicates that Fine's method is definitely reliable.

RESULTS

The mean number of figures used per card was 3.9, which is substantially the same as that found by Fine in his groups of asthmatic children and their siblings. No significant differences in age, sex, or referring symptom were found.

A notable result was the paucity of scorable feelings and relationships in the protocols. Only 1.4 feelings per card and .8 relationships per card resulted. No significant differences were found in age, sex, or referring problem. This paucity of feelings and relationships expressed is similar to that found with another thematic test given to a Pacific Island culture (3). There was also a qualitative similarity among the protocols in that both the American children and the Pacific Islanders tended to give merely sequential and acausal stories rather than themes with a plot. This is quantitatively shown in the children's records by the very high proportion of stories with indeterminate outcomes. Sixty-eight per cent of the outcomes of the stories were indeterminate, as compared with twenty-four per cent favorable and eight per cent unfavorable.

Because different cards were used among the various subjects, the results of the feelings and relationships categories are shown by rank-order of frequency in Table I. Most notable is the fact that the categories of physical hostility and hostility-death are the most frequent. They constitute 25 per cent of the total feelings expressed. When the category of verbal hostility was added, the hostility category totalled 28 per cent. This result is the

¹Thanks are extended to the following psychologists and technicians for giving of their time: Captains Wharton and Sternlicht, Lieutenants Mahrer and Nichols, Sergeants Sutherland and Brennan, Corporals Horowitz and Moll. The author was the ninth judge.

TABLE I. Rank-Frequency of Feelings and Relationships

Feelings	N	Relationships	N
1) Hostility—Physical	94	1) Aggression—Physical	81
2) Hostility—Death	76	2) Acceptance	74
3) Pain	65	3) Dominance	51
4) Depression	48	4) Aggression—Death	46
5) Pleasure	41	5) Aggression—Verbal	44
6.5) Crime	40	6) Affection—Physical	24
6.5) Anxiety	40	7) Affection—Verbal	22
8) Anger	32	8) Separation	20
9) Hostility—Verbal	30	9) Rejection	13
10) Escape	25	10) Submission	11
11) Compulsion	24	11) Indifference	5
12) Frustration	23		
13) Excitement	21	Total.....	391
14.5) Affection—Verbal	16		
14.5) Affection—Physical	16		
16) Orality	14		
18.5) Conflict	10		
18.5) Effort	10		
18.5) Sex	10		
18.5) Wishful Thinking	10		
21) Superiority	8		
22.5) Guilt	5		
22.5) Possessiveness	5		
24) Inferiority	3		
25) Drink	2		
26) Suicide	1		
27) Loneliness	0		
Total.....	668		

same as that found by Fine in his asthmatic children and their siblings. In the present study, however, in contrast to Fine's results, no significant differences in any of the feelings were found in age, sex, or referring problem. As in Fine's study, on the other hand, there was a trend for more hostility among the boys than among the girls.

The relationships categories reveal substantially the same results as do the feeling categories. The hostile relationships (moving against-physical, verbal, and death) constitute 49 per cent of all scorable relationships. No significant differences again were found in age, sex, or referral problem.

In view of these essentially negative findings, one can raise the question whether Fine's scoring system of verbal projective techniques is sufficiently sensitive to be applied with equal usefulness to all populations. This investigator feels that meaningful conclusions regarding both personality

dynamics and symptoms can be derived by means of individual assessment of children's MAPS protocols, but the use of the Fine scoring system fails to reveal statistically significant differences. It should be noted that the present group of children was given a variety of MAPS backgrounds and that the number of children in each symptom group varied considerably. It is possible that with larger numbers of children and a standard set of cards, more adequate differentiations could be made statistically. The relative similarity between Fine's groups and this group, the bulk of which are clinically referred, suggests the need for normative studies. This investigator is in agreement with Fine that any scoring system is a "means of highlighting important information and second as a framework for more detailed analysis," as well as his statement that normative data with verbal projective techniques are "urgently needed."

The TAT Aggressive Content Scale¹

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The purpose of this paper is to introduce the TAT Aggressive Content Scale, designed by the present author as a practical tool by which clinicians may objectively score hostile-aggressive responses on the TAT.

Originally, the Scale consisted of objective scoring criteria for classifying aggressive and non-aggressive responses. These criteria were much the same as the ones of the present Scale. Early application of this Scale to psychopathic and "normal" individuals led to a modification of the original scheme. Some additional breakdown of aggressive responses was felt to be necessary to provide a greater discrimination between more overtly hostile and more passive persons. Finney (3), in his Rorschach Content Scale, originally gave increasing weightings to his four aggression categories, but then he changed this because the weighted system showed no increased discrimination between his criterion of assaultive and non-assaultive patient groups. The only weighting his scale includes involves a double scoring of "aggression" if two of his categories are mentioned in a single response to the card.

The problem of introducing weightings into the scoring system was a complicated one. There are many types of modifications that could be utilized (1, 4, 6). One could, for example, score the direction of aggression. The assumption here would be that aggression turned outward in the response would bare a more direct re-

lationship to overt behavior than aggression turned inward. Or one could score the response on the basis of determining whether or not the aggression was phantasied or actual, and give the latter alternative a higher weighting. In constructing the Scale, however, two main considerations had to be kept in mind. One was the fact that it was intended to relate the Scale to overt behavior as much as possible. The other was that the modifications must not so complicate the scoring system as to make it unwieldy for clinical use or difficult to score reliably. The reader is here referred to the original dissertation for a more comprehensive survey of scoring systems (5).

The following two weightings were finally selected: (The next section, the Scale proper, explains these in detail.)

1. Each aggressive response was categorized as involving a Death content, a Physical Aggression content, or a Verbal Aggression content (2). These were weighted in a point system as 3, 2 and 1 points respectively. The assumption here is that death concepts would be indicative of greater aggression and poorer control and hence would be more related to overt aggressive behavior than the physical or verbal categories. A similar relationship seems likely between the physical and the verbal categories.

2. The response was also scored in terms of whether it showed active aggression or "potential" aggression. In the latter case, only half the point credit is given. This is discussed more fully on the following pages.

CARDS USED

Fifteen T.A.T. cards were used in the present study: 1-2-3BM-3GF-4-

¹ Submitted as part of a Ph.D. thesis submitted in June, 1953, to the University of California at Los Angeles (5).

² The writer wishes to express his appreciation to the following people for their invaluable aid in the writing of the original dissertation: Dr. S. Carolyn Fisher, Dr. Bruno Klopfer, and Dr. Alvin Lasko.

6BM - 8BM - 9GF - 11-12M-13MF-14-15-18GF-18BM. For the most part they were chosen because they are the cards most often used in routine testing. Eleven of them are cards that Bruno Klopfer lists as "the most productive pictures."³ Three of the 15 cards (1-2-14) have practically no aggressive pull. This means that they have little tendency to bring out aggressive responses in the subject. They were included, however, to determine whether or not aggressive prisoners might perceive them as aggressive and thus provide some discrimination between assaultive and non-assaultive groups. In addition, these cards are commonly used, and it was felt important to get as much information about their aggressive implications as possible.

Instructions for the Use of the TAT Aggressive Content Scale:

The following directions are to be used in scoring aggressive content on the Thematic Apperception Test (TAT). Each response is to be considered individually, and placed in one of the following four categories:

Category 0: Non-Aggressive Responses.

Category 1: Verbal Aggression. ("They had an argument.")

Category 2: Physical Aggression. ("He was shot.")

Category 3: Death Concepts. ("She died.")

These are more fully discussed below. The response gets a point score which is equivalent to the category number. Thus, a response placed in Category 2 receives a point rating of two points.

In some cases, the aggressive action of the story is implied or potential rather than active. (Examples are given below.) In this case, a "P" (for *Potential*) is added to the Category number. (For example, 2P.) When this is the case, the point score that would ordinarily be attributed to the Category is cut in half. In *Potential* scorings, the aggressive action is implied or placed in the future, or it may be a wish or idea that is not acted upon. The following themes are examples of *Potential* scorings where action is in the future.

Card	Theme Outline	Category
13MF	"He planned to kill her"	3P
11	"The animal was waiting to attack its prey."	2P
13MF	"He knew they would quarrel when he got home."	1P

In the following stories, the aggression is implied, or stated as a wish or thought that is not carried out:

3BM	"He was thinking of suicide but changed his mind."	3P
4	"He wanted to hit him, but she held him back."	2P
8BM	"He only wounded him, but he wished he killed him."	3P

The qualification of a response by such expressions as "could," "maybe," "might be," and others does not make the response *Potential*. Thus, in the following themes the scoring is in the *Death* and *Physical* categories.

13MF	"He could've killed her, maybe."	3
13MF	"Maybe he beat her up: maybe she'll be waken' up from sleep soon. Yah, she's probably just sleeping."	2

It is essential that the scorer not read into the responses. Thus, the theme "He committed some bad act," is scored in *Category 0* unless something more specific is mentioned that warrants its placement in *Category 1, 2* or *3*.

However, when in doubt about a response, score it as *Aggressive*. Or, if a single story has a number of alternative themes, or qualities in more than one category, score the highest single category, whether actual or potential.

8BM "He shot him. He'll probably die." 3P

Category 0: Non-Aggressive Responses —

Point Rating: 0

This category consists of themes which are considered to be non-aggressive. They are responses which are not scorable in the three categories listed below.

Category 1: Verbal Aggression—

Point Rating: 1

This category includes those stories in which hostility is displayed on a verbal level.

3GF	"They were quarreling (arguing)."	1
6BM	"She bawled him out."	1
4	"They were having a difference of opinion."	1
6BM	"He knew that she would yell at him if he did it."	1P
4	"He wanted to argue, but didn't feel like it."	1P

³ Personal communication, Fall, 1950.

Category 2: Physical Aggression —

Point Rating: 2

This category includes those responses involving physical assault, illness, bodily malformation, destruction to inanimate objects. The direction of the aggression (turned inward or outward) is not considered in the scoring.

Arbitrarily, "Punishment" and "Fighting" themes are scored in this category (unless *Verbal* is specified), and damage to inanimate objects is scored here as *Potential*.

Card	Theme Outline	Category	Category	Pts.
8BM	"He shot him."	2		
3GF	"She was sick." (Sickness in her family.)	2		
3GF	"They were arguing and he hit her."	2		
3GF	"She just had a fight with her husband."	2		
15	"He was a hunchback (cripple, blind, etc.)."	2		
4	"He was gonna hit him, but she persuaded him not to."	2P		
11	"The animal was waiting to attack its prey."	2P		
11	"They were running away from this here animal that was chasing them."	2P		
1	"The violin was broken."	2P		
Category 3: Death Concepts —				
Point Rating: 3				
This category includes those responses in which death is involved. Again, the direction of the aggression is not taken into account.				
13MF	"They were arguing and he killed her."	3		
3BM	"He committed suicide."	3		
11	"The animal swallowed its prey."	3		
6BM	"There was a death in the family."	3		
15	"He was standing by his son's grave."	3		
3BM	"He was thinking of suicide, but decided not to."	3P		
12	"He planned to (wanted to, thought of) kill him."	3P		
3GF	"The girl lost someone dear; she's crying."	3P		
15	"He was praying at the grave of someone dear."	3P		
Below are the various cards used in the present study together with various TAT responses. These are for the purpose of further clarifying and anchoring the scoring categories.				
Card	Theme Outline	Category	Category	Pts.
1	"The boy is practicing his violin and doesn't want to."		0	0
	"He broke his violin."		2P	1
1	"He knows that if he doesn't practice he will be punished."		2P	1
2	"Farm Scene."		0	0
	"Man whipping his horse."		2	2
3BM	"He's suffering from grief or unhappiness."		0	0
	"He had an argument with someone."		1	1
	"He's not feeling well; he's sick."		2	2
	"He's just been punished."		2	2
	"He's just been punished; his mother bawled him out."		1	1
	"There's been a death in his family."		3	3
	"Someone is real sick; probably dying."		3P	1-1½
3GF	"She had an argument with her boyfriend."		1	1
	"She just heard bad news."		0	0
	"Someone is very ill; she's worried."		2	2
	"She's thinking of suicide."		3P	1-1½
	"Someone just died; she's coming out of the room."		3	3
4	"He wants to do something and she don't want him to; probably something bad."		0	0
	"They're having some kind of disagreement or difference of opinion about something."		1	1
	"He wants to get this guy and she's trying to hold him back."		2P	1
	"Looks like he's raped this girl."		2	2
6BM	"He's telling her some bad news."		0	0
	"He's done something wrong, some bad act, and he's in trouble."		0	0
	"She's reprimanding him for doing something he shouldn't have done."		1	1
	"Someone's died and he's telling her."		3	3

Card	Theme Outline	Category	Pts.	Card	Theme Outline	Category	Pts.
6BM (cont.)	"He's done something wrong. Maybe told a lie, maybe killed someone."	3	3	13MF (cont.)	at what he's done." "He's shackled up with her."	0	0
8BM	"They're operating on this man."	0	0		"He raped her."	2	2
	"The boy wants to be a surgeon. This guy's on a battlefield and they're operating."	0	0		"She's real sick and he don't know what to do."	2	2
	"This guy's been shot. They're operating."	2	2		"She was sick and died. He feels real bad."	3	3
	"The doctor is cutting this guy."	2	2	14	"He's sneaking in the house."	0	0
8BM	"The doctor is probing for a bullet."	2	2		"Robbery or burglary."	2P	1
	"He's been shot; he'll probably die."	3P	1-1½		"Thinking about suicide. He probably jumps."	3P	1-1½
	"This guy was shot and he dies."	3	3	15	"Ghost, Ghoul, or Spirit in a graveyard."	0	0
9GF	"The girl is running away from someone or something."	0	0		"A minister praying to his friends."	0	0
	"The girl is terrified of something."	0	0		"A ghoul; getting ready to dig up a dead body."	2P	1
	"The girl is planning to get even."	0	0		"Old man standing at the grave of a loved one or relative praying."	3P	1-1½
	"The two girls had a quarrel."	1	1		"An old man standing at the grave of his wife or son." (Score 3 if any close relative is specifically mentioned.)	3	3
	"This girl is planning on harming the other one."	2	2	18GF	"The girl slipped and she's helping her."	0	0
	"Someone has drowned in the ocean."	3	3		"She's not feeling well (ill, faint)."	2	2
11	"The man is running away from something."	0	0		"She slipped and fell down the stairs."	2	2
	"That animal is chasing him."	2P	1		"She's strangling her; she'll probably die."	3P	1-1½
	"The dragon is waiting to pounce on its prey."	2P	1		"She's choking her to death."	3P	1-1½
	"They're running away from that animal: it probably gets one of them."	3P	1-1½		"She's choking her; she looks dead."	3	3
12M	"He's hypnotizing the boy."	0	0	18BM	"He's drunk."	0	0
	"The psychiatrist is trying to find out what's wrong."	0	0		"He's a crook, probably arrested by police."	0	0
	"He's about to choke the boy."	2P	1		"He's been robbed or rolled."	2	2
	"He's hypnotizing the boy; wants to control him so he can do his dirty work."	2P	1		"He's sick and someone is helping him."	2	2
	"The boy is ill."	2	2		"He's been caught by the police and is trying to get away." (Score similarly any story where figure is being held against will and struggling.)	2	2
	"It's a priest performing the last rites."	3P	1-1½		"He's trying to fight this guy but they're holding him back." (Score 2 on basis of being held back; otherwise score 2P.)	2	2
13MF	"He just had intercourse."	0	0				
	"He's filled with remorse"						

RELIABILITY

To determine whether the TAT Aggressive Content Scale could be scored in a consistent fashion by different examiners, 120 TAT stories were randomly selected from the total number of subjects' responses and independently scored by two clinical psychologists. In addition, the writer's scoring of these responses was taken directly from the protocols he had already scored. The 120 TAT stories were divided equally among the fifteen cards utilized in the study: the eight responses from each card were randomly selected.

Considering the writer as Judge Number 1, the percentage agreement obtained between the three ratings was as follows:

Judges 2-1: 94.16%

Judges 3-1: 90.00%

Judges 2-3: 89.16%

Judge number three made a consistent error in scoring Category 1 responses which was responsible for many of the failures in agreement. Analysis of the scoring errors showed several instances where minor revisions in the scoring directions could increase the scoring reliability. On the basis of the agreements obtained, however, we are justified in concluding that the TAT Aggressive Content Scale is reliable in that it can be scored consistently by different judges.

VALIDITY

Three groups of army prisoners were utilized in this study. All were prisoners at the United States Disciplinary Barracks at Lompoc, California, and the length of confinement was approximately constant for the three groups. No cases psychiatrically diagnosed as psychotic, suffering from organic brain damage or feeble-minded were included in the study.

Group 1, characterized as least aggressive, consisted of 25 men. The confinement offense for all members of this group was AWOL or desertion

while in combat in Korea. The previous history of these men showed no record of previous offenses, and the social history available showed no record of overt acting-out behavior (such as fighting). Our reason originally for considering Group 1 the least aggressive was that the offenses committed by this group cannot be considered as "acts against society or against authority"; they have been committed under stress of a combat situation, and there is no reason to assume underlying hostility or aggression as responsible for the act. Further consideration of these groups after the study was once under way led the author to reject the above analysis of the relative degree of "aggressiveness" of Groups 1 and 2. Since our original hypotheses were based on these assumptions, however, the line of reasoning described above was carried through. In the discussion chapter of the original dissertation have been outlined the reasons why it was felt that this analysis is faulty, and an alternative way of conceptualizing the data is set forth.

Group 2, characterized as medium aggressive, consisted of 27 men. The confinement offense for all members of the group was AWOL or desertion in a combat situation. In addition to the confinement offense, each member of this group had a record of at least two previous "non-aggressive" offenses. In most cases, these offenses were also AWOL, though a few petty larceny and narcotics charges were included. Our original reason for considering Group 2 more aggressive than Group 1 was that repeated AWOLs and desertions under non-combat conditions were interpreted as anti-social behavior. It was felt that these men had a great deal of hostility which they were unable to act out directly. The presence of this hostility, the writer believed, would make these men more aggressive than those of Group 1 where there was no reason to expect any unusual hostility patterns.

Group 3, characterized as most aggressive, consisted of 31 men. These men were confined to prison for an aggressive offense, usually murder or assault with intent to commit murder. In addition to the confinement offense, each member of this group had a record of at least two previous assaultive offenses which could include fighting.

Table I below shows the individual point score breakdown among the three groups as scored by the Scale.

PREDICTIONS

According to our original conceptualization of a "gradient of aggression," the following predictions were made, followed by the results of the TAT scoring.

1. Group 3 should show a greater amount of aggressive content than Group 2. The hypothesis was confirmed by a "t" ratio of 3.06, $p = .01$.
2. Group 3 should show a greater amount of aggressive content than Group 1. The hypothesis was ques-

tionable, with a "t" ratio of 1.88, $p = .06$.

3. Group 2 should show a higher aggressive content score than Group 1. This hypothesis was not confirmed. The trend was reversed with a "t" of 1.37, $p = .10$.

4. Group 3 (assaultive) should show a greater amount of aggressive content than the combined non-assaultive Groups 1 and 2. This hypothesis was confirmed by a "t" ratio of 2.98, $p = .01$.

The TAT Aggressive Content Scale does discriminate in a significant way between the assaultive and non-assaultive groups of this study. Our original conceptualization of these groups as existing on a gradient of aggression is theoretically unsound, since other variables than aggression are no doubt involved. For example, is it sound to think of Group 2 as being more aggressive than Group 1 simply because they have committed more than one non-assaultive offense. Other variables such as ego control and stress tolerance enter in here, and

TABLE I—Distributions of Individual Scores for Members of the Three Groups

Score*	Group 3	Group 2	Group 1
27.....	.....	.....	.....
26.....	X	.....	.....
25.....	X	.....	.....
24.....	X	.....	.....
23.....	.....	.....	X
22.....	.....	XX	.....
21.....	X	.....	.....
20.....	XX	.....	X
19.....	XXX	XX	.....
18.....	XXX	.....	.....
17.....	X	.....	X
16.....	.....	.....	XX
15.....	XX	X	.....
14.....	X	.....	XX
13.....	XXXXX	XXX	XXXX
12.....	XXXXX	.....	XXX
11.....	X	XX	XXX
10.....	X	XX	XX
9.....	XXX	XXXXX	.....
8.....	.....	XXX	XXXXX X
7.....	.....	XXXX	.....
6.....	.....	.....	.....
5.....	.....	.....	.....
4.....	.....	XXX	.....
	Mean = 15.59	Mean = 11.76	Mean = 13.48
	Sigma = 4.65	Sigma = 4.36	Sigma = 3.86

* Point scores on TAT Aggressive Content Scale.

may well affect the aggression score. If we concern ourselves with the openly assaultive Group 3 as opposed to Group 2 or Group 1, or to Groups 2 and 1 combined, the results are essentially as predicted.

Thus, though our predictions are not completely confirmed when based on the original "gradient" theory, it does appear that the Scale does statistically discriminate between assaultive and non-assaultive groups. This by no means constitutes a total validation of the Scale, but seems to indicate that further research involving its use might be worthwhile. More specifically, it would be most meaningful to use the Scale with other measures of overt and covert aggression to determine the degree of correlation between the Scale and these measures.

ANALYSIS OF INDIVIDUAL CARDS

It was felt that certain TAT cards might show greater discrimination between assaultive and non-assaultive groups than other cards. Since the TAT, unlike the Rorschach, does provide a choice of cards to be used in the administration, the determination of discriminating cards would be valuable for the clinician especially interested in the potential acting out behavior of the subject he is testing. To accomplish this, the responses to each story were broken down among the six scoring categories (3, 3P, 2, 2P, 1, 1P) and compared among the three groups. Cards 1 and 2 drew a total of only three aggressive responses. These were all given by Group 3. Card 14 drew seven aggressive responses. These were equally distributed among the groups. As we expected, then, these cards do show little "aggressive pull." On Card 8BM, Group 3 showed a considerably greater number of physical aggression responses than Groups 1 or 2 (Group 3, 20; Group 2, 11; Group 1, 13). On Card 11, Group 3 showed a larger number of Category 2P responses than Groups 1

or 2 (Group 3, 15; Group 2, 6; Group 1, 7). Cards 3BM and 3GF show the largest discrimination between assaultive and non-assaultive groups, and this discrimination is mainly shown in Category 3, Death Contents. It seems that Cards with too great an aggressive pull, such as 13MF, 18GF and 18BM, are not the most useful cards for predicting aggressive behavior. The pull towards the aggressive contents in these cards is so great that all types of subjects give responses involving Death and Physical Aggression contents.

SUMMARY

The TAT Aggressive Content Scale was developed with the aim of providing the Clinician with a practical tool by which he could objectively score hostile-aggressive content on the TAT. In general it appears that the Scale does, to some extent, accomplish this aim. It has sufficiently objective scoring criteria so that it can be scored in a consistent fashion by different persons. It does have a fair degree of validity, as determined by the statistically significant discrimination shown by it in the scoring of protocols of assaultive and non-assaultive prisoners. The results indicate that future work with this scale, specifically oriented towards correlating it with other measures of overt and covert aggression, may well be useful.

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Neurotic Depressives' and Alcoholics' Oral Rorschach Percepts¹

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PROBLEM

Psychoanalytic theory states that both depressed and alcoholic patients have oral features prominent in their character structures. The orality of depressed patients is characterized by ambivalence in which the need for oral supplies (e.g., love, security, esteem boosters) is in conflict with oral incorporative or destructive devouring needs (2, pp. 389 ff.). The hostility of the depressed patient, originally directed against frustrating objects, appears in the form of self hatred.

Alcoholics are characterized by Fenichel (2, p. 376) as oral characters whose fixation is at a more passive, recipient level. Presumably the ambivalent hostile aspect of orality is not as pronounced in the alcoholics as in the depressive. The alcoholic is interested in receiving self esteem gratifiers and has little interest in his love objects apart from their ability to fulfill his needs.

It is hypothesized that the differences between these two character organizations will be reflected in the content of their Rorschach percepts. The quality of the projected oral Rorschach response should indicate the degree of ambivalence associated with the orality. Neurotic depressive's oral percepts, compared to those of the alcoholic character disorder, will contain more references to hostility.

Review chapters by Sarason (3, ch. 15) and Schafer (4, ch. 4) on thematic analysis of Rorschach protocols indicate a trend toward examining content in other than the usual content categories familiar to Rorschach users. Schafer (4, pp. 130-138) provides a scheme for categorizing responses ac-

cording to psychoanalytically derived variables. Another purpose of this research is to experimentally test the possibility of examining Rorschach data from the viewpoint of psychoanalytically derived content categories.

METHOD

Rorschach protocols were examined for oral references. These were defined strictly as spontaneous mentions of food objects, parts of the anatomy used for ingestion, acts of eating or preparing food, use of the mouth for eating or non-eating purposes, and mentions of eating or cooking implements. All such oral responses were then placed into either of three categories: positive, neutral or hostile. Positive oral responses consisted of mentions of food, parts of the anatomy used in food eating and digestion, acts of eating or preparing food, and food concerned implements. Responses such as "tomato," "mouths," "waiters serving," and "cup" were classified as positive oral responses. Hostile orality was specifically defined in terms of hostile devouring responses and non-eating but hostile use of the mouth. Responses such as "people spitting," "preying lions," and "cannibals" come under this classification. Neutral oral responses were those which saw the mouth used for non-eating and non-hostile purposes such as "people whistling."

The subjects were 27 patients (15 men and 12 women) diagnosed as passive aggressive character disorders with alcohol addiction and 15 patients (10 women and five men) diagnosed as neurotic depressives. Data concerning the differential responses of men and women patients for each diagnostic category are presented in Table II. Sex did not appear as a significant

¹ The author is grateful for the support given this research by The Seton Psychiatric Institute and Dr. Leo H. Bartemeier.

variable in this study. The mean age of the alcoholic group was 47.1 years. This was not significantly different from the mean age of the depressed group which was 45.1 years. Depressed patients were limited to the neurotic range of mental illness, because it was felt desirable to maintain some consistency in the level of ego organization. None of the subjects was considered clinically psychotic. There was doubtless some overlap in the overt behavior of the two groups. Alcohol addiction is in many cases an attempt to avoid depressed affect. Depressed patients may vary in the extent to which they consume alcoholic beverages either as "social drinkers" or as an attempt to find relief from their symptoms. However the diagnostic category is used to imply different behavior preferences. People with a depressive diagnostic label are more overtly depressed than alcoholics. Similarly, alcoholics use more alcohol than neurotic depressives.

Psychological test batteries including the Rorschach were administered for standard psychiatric use independently of this study and prior to its formulation.

RESULTS

The data shown in Table I indicate that both groups produce similar percentages of oral responses. The alcoholic group, compared to the depressives, produce significantly less of the hostile and neutral types of responses and more of the positively toned responses.

Within the alcoholic group, more positive oral responses were elicited than hostile oral responses ($t=7.2$, $p<.01$). For this group, the positive responses also outnumber the neutral responses ($t=8.5$, $p<.01$). The difference between the neutral and hostile responses were not significant.

The depressive group produced hostile and positive oral responses in roughly equal amounts. The difference between such responses was not significant. The amount of positive as compared with neutral responses was not significant ($t=1.51$, $p>.10$, two-tailed test of significance). Nor was there a significant difference among the amounts of hostile as compared with neutral responses ($t=1.48$, $p>.10$, two-tailed test of significance).

Table II indicates that men and

TABLE I. Oral Rorschach Percepts of Neurotic Depressive and Alcoholic Patients

Diagnostic Category	% All Oral Responses	% Hostile Oral Responses	% Neutral Oral Responses	% Positive Oral Responses
Neurotic Depressives (N=27)	15.80	6.00	3.00	6.80
Alcoholics (N=15)	16.44	1.96	.63	13.85
Difference	.64	4.04	2.37	7.05
t	.38	2.91	2.69	2.71
p	---	<.01	<.01	<.01

Note: Each of the percent entries in Table I was calculated by finding the percent of the response for each subject and taking the mean of the separate percent scores, as suggested by Cronbach (1).

TABLE II. Sex Differences in Oral Rorschach Imagery

	% Hostile Oral Responses	% Neutral Oral Responses	% Positive Oral Responses
Neurotic Depressives			
Women (N=10)	6.40	3.00	6.10
Men (N=5)	5.20	3.00	8.20
Difference	1.20	.00	2.10
Alcoholics			
Women (N=12)	2.17	.00	13.83
Men (N=15)	1.80	1.13	13.87
Difference	.37	1.13	.04

women of both diagnostic categories do not behave differently with respect to the variables considered. None of the differences shown in Table II are significant. Pooling subjects regardless of sex seems justified for this study.

DISCUSSION

Neurotic depressives produce both oral accepting and oral hostile Rorschach themes. This appears compatible with the psychoanalytic definition of the depressive character. Dependency needs are present, but ambivalently so. Oral incorporation of the needed and loved object has a hostile tinge and is related to destruction of the object. The preponderance of oral accepting images in the alcoholic's oral percepts is in concordance with his need for supplies and his apparently unblocked behavior in procuring the needed oral gratifiers. That alcoholics do not tend to form oral-hostile percepts does not imply that they are not hostile. The failure of a Rorschach variable to appear may indicate either a repression of the presumed corresponding dynamic need or its relative unimportance. Secondly, hostility appears in other than oral contexts. To the extent that Rorschach percepts are behavior responses, it is seen that the behavior of the depressive group included security seeking in a context of ambivalence, whereas the security seeking behavior of the alcoholic is relatively unambivalent.

It was noted that the depressive group responds with more neutral oral responses than the alcoholic group. A possible explanation is that the conflict between oral receptive and oral hostile needs causes a displacement of the orality onto more neutral content. The oral preoccupation emerges, but without the conflictful connotations.

The different Rorschach behavior between the two groups implies that thematic analysis can be a fruitful procedure. The data are not presented in order to suggest diagnostic indicators.

Doubtless, other diagnostic groups, as well as normal people, will perceive varying amounts of oral responses. However, it does seem useful from the viewpoint of experimentation and clinical practice to evaluate Rorschach percepts according to psychoanalytic content categories.

SUMMARY

This study was concerned with demonstrating the feasibility of examining Rorschach content in the light of psychoanalytically derived content variables. It was hypothesized that the oral Rorschach responses of neurotic depressives, compared to alcoholics, would contain more references to hostility. Rorschach records of 27 neurotic depressives and 15 alcoholic character disorders were compared. It was found that the depressives produced almost equal amounts of positive and hostile oral percepts. Alcoholics, compared to depressives, formed significantly fewer hostile oral images and significantly more positive oral imagery. The alcoholic's positive percepts significantly outnumbered their hostile imagery. Depressives produced significantly more neutral oral imagery than the alcoholics. These results were evaluated in terms of psychoanalytic theory. Both diagnostic categories possess oral characters in that love, warmth, security, etc. are sought after through the use of oral mechanisms. However, depressive personalities are characterized by ambivalence toward the love object, more so than alcoholics.

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BOOK REVIEWS

Henry, William E. *The Analysis of Fantasy. The Thematic Apperception Technique in the Study of Personality.* New York: John Wiley & Sons, Inc., 1956. Pp. 305.

In the preface of the book the author indicates his purposes and plans. I quote one because it is of universal importance and one which he achieves so well: "... to be able to formulate their practices and principles in ways sufficiently clear to permit both systematic investigation and a transmittal of these principles to their colleagues and students." Essentially his other purposes are to show in simple fashion how the Murray Thematic Apperception Test can be used to infer psychodynamics whether it be specifically for clinical purposes or for a variety of research. Part One deals with interpretation as applied to the response in general; discusses interpretation as applied to the specific T.A.T. stimuli; and presents "A conceptual framework for an individual case analysis." Part Two presents illustrative material. Part Three gives a stimulus analysis of the cards.

In discussing "The Task of Interpretation" he makes the important point that the neglect of the normal response in favor of searching for the distorted or anxiety ridden one is unfortunate because the "normal responses are of great importance in showing the setting within which deviancy occurs and in analyzing the techniques of adjustment and ego strength." He points out also the importance of recognizing that the subject's response is not only his private reaction but involves his techniques for adapting his own feelings and emotions as expressed through learned symbols.

In considering the criteria for selection of the pictures he recommends that "It further seems advisable to make the initial selection of pictures along the lines of basic interpersonal relations rather than primarily along the lines of selected emotions" or "situations." This recommendation is particularly important in planning the battery of tests where the examiner should consider the rationale for his choice of tests. Often, in the eyes of this reviewer, the Rorschach is over-extended to interpret attitudes toward object relationships instead of making use of a more pertinent approach such as the T.A.T.

Although there is no attempt to plumb the

depths, this book is an excellent presentation and because of the clarity of style and organization may appear deceptively simple to some readers. The book certainly can be highly recommended as a text for courses dealing with the use of the T.A.T.

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Kaplan, B. and Plaut, T. F. A. *Personality in a Communal Society: An Analysis of the Mental Health of the Hutterites.* Lawrence, Kansas. University of Kansas Publications, Social Science Studies, 1956. \$3.25. xi+116.

During these times of increasing concern over mental health any study which aims to shed new light on its etiology or understanding is indeed welcome. This hundred-odd page brochure at the outset gives promise of meeting this need. It consists of a study by an interdisciplinary team of two psychologists (the authors), a psychiatrist, and a sociologist, and represents an attempt to evaluate the mental health of a particular cultural group—the Hutterites. This communal, religious sect exhibits a low incidence of mental disorder and appears to enjoy a successful adjustment to a culture pattern wherein the individual is subordinated to the group welfare in a rather extreme manner. Nevertheless, outwardly they appear poised, carefree and happy and seem to live together harmoniously with minimal signs of anxiety or emotional distress.

The authors were primarily concerned with evaluating whether the good mental health picture of the group was actually so. If verified, they reasoned, study of these people might fruitfully aid in uncovering the conditions under which good mental health can develop. They then proceeded 1) to explore the salient personality characteristics of more or less normal members of the society; 2) to appraise these data within a mental health frame of reference.

Projective materials used to ascertain the Hutterite personality dynamics were the TAT and a modified version of the Stein Sentence Completion test. The Rorschach was not utilized because after collecting a few records, the authors felt the technique was not productive in the setting, and the data could not be easily related to the culture

matrix nor readily understood and communicated to the non-psychologist workers (sic!). Utilizing Murray's personality conceptual scheme, frequency tallies were made of various relevant psychological variables as inferred from the projective responses. To determine the mental health picture of the people ten areas of personality functioning which the writers felt were the foci of both good mental health and psychopathology (e.g., guilt, aggression, love and sex, deviance, belongingness-isolation, and anxiety) were selected. The personality findings were then used to ascertain in a qualitative way how effectively the Hutterites were able to handle stress in these areas.

The conclusions they finally arrive at are somewhat disappointing, ambiguous, and equivocal. One point is expressed with firm conviction: that the Hutterite behavioral picture of conformity and harmony is not paralleled by a similar harmony at the level of personality. It is when they attempt to appraise the mental health of the group that the authors appear to flounder. Throughout the volume they tend to evaluate mental health in terms of pathologies present or in divergences from ideal standards. Within this framework they concluded that the Hutterites were considerably more maladjusted than they seemed to be. As these people exhibited relatively few symptoms and appeared to handle their problems well, the writers wondered whether perhaps the pathology found in the group might not reasonably fall under the "concept of normal pathology." Thus, they end by straddling the issue maintaining "we would strongly reject the conclusion the Hutterites have especially bad mental health. However neither can we feel that the hypothesis of especially good mental health can be maintained," and throw the problem back into the lap of the frustrated reader.

Research in the area of mental health is at best a perilous and difficult undertaking strewn with numerous pitfalls. This appears to be partly a function of the complex nature of the data and the vast gaps in our theoretical knowledge in the field of culture and personality, and partly due to the crudity and lack of suitable normative and validity information on our measuring instruments.

While the authors are aware of the difficulty of selecting suitable criteria for good mental health and possible bias in their sampling, they seem somewhat unsophisticated about other sources of error: many test performances are incomplete; statistical

pooling of data is done in a haphazard manner; and there is possibly a pessimistic bias in their TAT interpretations. Research on the TAT has tended to support the latter, yet the investigators seem oblivious of this fact. Clinicians may also be interested to learn that 13MF, the most sexually loaded card, was omitted because the writers felt it might be too threatening, only later to realize it was their own projection. The most constructive implication of this study is the painful need for more normative data on the TAT before any valid inferences can be drawn concerning the maladjustment of either a person or a group.

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Kataguchi, Yasufumi. *Shinri-Shind-an-Ho. (The Psychodiagnostic Technique: Rorschach Test.)* Tokyo: Maki Book Co., 1956. Pp. 257.

This introductory text in the Rorschach coming from the National Institute of Mental Health in Japan is another indication of the geographically expanding interest in projective methods. This Journal has recently published reviews of similar, though less comprehensive, texts that have emerged from other countries. The volume under consideration is an unusually up-to-date introduction to the Rorschach method, utilizing most of the recent European and American contributions. In this respect, it is a decidedly superior volume.

While specific statements cannot be translated by the reviewer to whom Japanese characters are less structured than the inkblots they describe, a few general statements can be made about the book on the basis of inferences from references, tabular material, and occasional English words.

The sequence of discussion is conventional: a chapter on projective psychology, methodology and applications; description and administration; scoring, diagnostic indications and psychotherapeutic applications. Klopfer's scoring is used throughout and a modification of the Klopfer-Davidson record sheet is employed. In addition, Rapaport's qualitative descriptions of verbalizations and perceptual distortions are listed on the record sheet. A detailed discussion of form-level makes use of Beck's Z and Klopfer's latest published material and exemplifies with a number of scored responses.

The presentation of clinical-diagnostic cri-

teria tends to be somewhat brief and to emphasize a sign approach, although the conventional clinical hypotheses regarding both qualitative and quantitative data are enunciated. It is not, perhaps, to be expected that an introductory text such as this delve profoundly into the subtleties of diagnostic and clinical inference from Rorschach data. In connection with clinical considerations two cases are presented to exemplify the process. A rather complete presentation is made of the various diagnostic scales based upon the Rorschach: anxiety indicators, Bühler's Basic Rorschach Score, Munroe's Inspection Technique, Piotrowski's organic signs and the like. The book closes with a

chapter summarizing research findings on prediction of therapeutic success and evaluation of personality changes.

The Japanese references included in the extensive bibliography will, of course, be of limited utility to English-speaking clinicians.

This reviewer's overall impression is that Kataguchi's text is broader and more modern in coverage than any other foreign introduction to the Rorschach which has come to his attention.

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GENERAL NEWSLETTER

Okino, Hiroshi. Studies on the Bender-Gestalt Test. *Folia psychiatrica et neurologica Japonica*, 1956, 9, 314-328.

Bender-Gestalts of 327 Japanese adults, patients and controls, were analyzed by means of an objective scoring scheme of 121 variables. Results are compared with those of other studies.

Schachtel, E. Sobre la memoria y la amnesia de la niñez. *Revista de Psicología*, 1956, 1, 142-188. (Bogota).

A summary of the literature on infantile amnesia with some reference to the Rorschach.

Ulisses, Rodrigo. Personalidade egocentrica - acusado como mandante de crime de morte - responsabilidade plena - estudo psicodinamico do reu. *Arquivos do Manicômio judiciario Heitor Carrilho*, 1955, 24, 127-143. (Rio de Janeiro.)

Case study of a mathematics teacher convicted of murder and rape. Rorschach findings are presented.

Boisbourdin, C.; de la Roche, A. de B.; Michel, A.; and Peltier, J. R. Expérimentation du test P. F. de Rosenzweig sur un group d'élèves pilotes de l'armée de l'air. *Revue de Psychologie Appliquée*, 1956, 6, 15-27.

Rosenzweig's Picture-Frustration Test was unsuccessful in predicting success of student fliers.

Karl, Helmut. Die Methodik des Mittelprotokolls im Farbenpyramiden Test. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 123-145.

Factor structure, validity and reliability of Color Pyramid Test scores were obtained when both unpleasant and pleasant pyramids were combined into a single scoring system.

Spreen, Otfried. Stirnhirnverletzte im Rorschach-Versuch. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 146-173.

Statistical findings in Rorschach protocols of varied frontal brain lesion cases, reveal significant subgroup differences.

Wewetzer, Karl-Hermann. Bender-Gestalt-Test bei Kindern: Auswertungsmethode und differentialdiagnostische Möglichkeiten. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 174-186.

Data are presented on a new method of

scoring the Bender Gestalt drawings, yielding six scores which differentiate normal and brain-injured children.

von den Broek, P. L'application des tests de Rorschach et de Behn-Rorschach dans le cas d'une schizophrénie naissante. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 186-196.

Case study of an incipient schizophrenic reaction.

Weber, A. Zur Geschichte des Rorschach'schen Formdeutsversuchs. *Zeitschr. f. diagnost. Psychol.*, 1956, 4, 206-212. (Rorschachiana.)

A brief historic summary of some of the methodologic precursors to Rorschach's study.

Mange, Roberto. Evolução da psicotécnica em São Paulo. *Arquivos Brasileiros de Psicotécnica*, 1956, 8, 5-7.

A brief history of the development of psychotechnology in Sao Paulo. The Rorschach is mentioned.

Vieira, Marcus V. M.; Amorim, Jose A.; and de Carvalho, Armando V. O Psicodiagnóstico Miocinético na seleção de motoristas. *Arquivos Brasileiros de Psicotécnica*, 1956, 8, 53-65.

This paper presents findings in the use of Mira's Myokinetic Test for the driver selection. In addition a 107 item bibliography of the Myokinetic Test is appended.

Cullinan, Dora de B. O Amigo Ideal. *Arquivos Brasileiros de Psicotécnica*, 1956, 8, 67-72.

The author introduces a thematic test which requires the subject to write an essay describing his ideal friend.

Roth, Anton. Erfahrungen mit dem Make A Picture Story von Edwin S. Shneidman. *Diagnostica*, 1956, 2, 21-30.

MAPS data of adult German subjects are compared with those of other German and American samples.

Escobar Valle, Lauro. El Psicodiagnóstico de Rorschach en síndrome epileptico. *Archivos de Criminologia, Neuro-psiquiatria y Disciplinas Conexas*, 1956, 4, 426-462. (Quito.)

Rorschach findings in 80 cases of epilepsy are described and compared with findings of other Rorschach investigators.

ANNOUNCEMENTS

REPORT OF THE EDITORIAL COMMITTEE, AUGUST 1956

The following report summarizes the activities of the Editorial Committee and the progress of the Journal through 1955 (Volume 19) into 1956 (Volume 20).

During 1955 a group of five papers were solicited to commemorate Jung's 80th birthday. The first issue of Volume 20 consisted of a series of papers, some invited, to commemorate the 100th Anniversary of Freud's birth.

The following table summarizes the distribution of manuscripts in the Journal for the past five years.

	1951		1952		1953		1954		1955	
	No.	Pp.	No.	Pp.	No.	Pp.	No.	Pp.	No.	Pp.
a. Total Pages		596		558		528		536		492
b. Articles published	38	459	35	450	50	427	53	449	46	383
c. Articles accepted	43		34		53		36		46	
d. Lag increment (c-b)	5		-1		3		-17		0	
e. Rejection rate	35.8%		46.0%		40.4%		55.6%		47.1%	
f. Total Mss. Received	67		63		89		81		87	
g. Mean Pp. per Article		12.1		12.9		8.5		8.5		8.3
h. Space for articles	77.0%		80.6%		80.9%		83.8%		77.8%	
i. Book reviews	7		6		15		9		22	

It will be seen that there has been a gradual reduction in the number (a) of pages in the Journal as a result of increased costs with a slighter decrement in the number of articles published. The relative constancy (b) in amount of new material despite decreased space is due primarily to two factors: the shortening of articles (g) resulting partly from editorial pressures and the more efficient use of space per page (smaller margins and smaller type).

Our rejection rate (e) increased markedly from 1951, but seems to have passed its peak. The figures from 1955 indicate something real: namely, that the manuscripts submitted to the journal have improved in caliber despite the raising of editorial standards. In a few years a flock of new clinical psychologists have been trained, with research as well as clinical skills. More of the manuscripts are experimental and theoretical; fewer are primarily clinical. Fewer papers than formerly require revision. Along with improvement in quality has gone, fortunately a decrease in length. Apparently our contributors are surer of what they wish to say and therefore

need less space in which to say it. We believe, however, that brevity has reached its realistic limit. During the past year we have in fact requested authors to expand their papers in the interest of clarity and completeness.

Publication lag is a fickle variable. We measure it from the time of receipt of the paper and not date of acceptance. In 1951 the lag varied from 9 months for issue No. 1 to 12 months for No. 4. In 1955 it varied between 10 and 11 months. In 1956 because of the commemoration issues of largely requested papers, the second issue had a lag of 13 months which reduced to 10 months in the third issue. Manuscripts on hand for the

December 1956 issue will average 8 months from date of receipt.

This journal is set up for its next issue as soon as the previous issue comes off the press, requiring, thus, a 3 months gestation period. Our editorial staff takes about two months to process a manuscript. This means a minimum of five months lag between receipt and publication under ordinary circumstances. In order to be ready for publication a journal editor must have his material on hand some time before it is sent to the printer.

The 8 month lag which is anticipated for December does not, therefore, seem much beyond the requirements of processing and the editor's feeling of security in having enough material for the journal. In addition, in a quarterly journal such as this, a one-issue holdover adds three months to the lag. At the present time we have enough accepted manuscripts on hand, including those being processed, for approximately one issue, the fourth for 1956. The September issue is now in press.

The editorial staff is gratified that even though there has been a 100 page (a) reduc-

tion in the Journal which offset much of the cost increment between 1951 and the end of 1955, we have been able to publish more articles than in 1951 (b).

A few features which have expanded during the past few years have taken more space from articles, but seem to us to serve a useful purpose, are brief abstracts of relevant foreign publications from exchange journal and book reviews. Many of these reviews are of foreign books which fail to be noted in most psychological journals and hence seem particularly important for our subscribers. (i)

Plans are being considered for new features which may make the journal more useful to our foreign subscribers. We are considering the feasibility of printing brief abstracts of all articles in French, German, and Spanish. This is a common procedure in many foreign journals who have apparently little confidence in the significance of U.S. Ph.D. language requirements.

Respectfully submitted,

BERTRAM R. FORER, PH.D.
Executive Editor

REPORT OF THE INTERNATIONAL COMMITTEE, AUGUST 1956

Re: Hackbush Memorial and foreign journal subscriptions and exchanges.

It will be of relevance to the affairs of the International Committee to be aware of the extent of awareness of the Society which may be manifested by the various foreign subscriptions and exchanges of the Journal. It is also the direct affair of the Committee to deal with the Hackbush Memorial. To bring the Board, and the International Committee, up to date on these matters, there follows a report of the extent of the foreign subscribers and a list of the present beneficiaries under the Hackbush Memorial.

Foreign Subscribers

England	20	France	7
Norway	7	Spain	1
Sweden	77	Italy	4
Finland	5	Hungary	1
Denmark	4	Turkey	1
Holland	24	Israel	6
Germany	4	India	2
Belgium	1	Japan	14
Switzerland	1	Africa	7
New Zealand	1	Australia	13
South America	3	Puerto Rico	1
Cuba	2	Hawaii	1

France	3	Spain	1
Ecuador	1	Germany	1
Switzerland	2	Brazil	1
Uruguay	1	India	5
Portugal	1		

Hackbush Memorial Journal Gifts

British Psychological Society, London
Professor Gino Bergami, Laboratorio di Fisiologia Umana, Napoli
Giulio C. Pupilli, Istituto di Fisiologia Umana, Bologna
R. S. Rastogi, Editor, Journal of Correctional Work, Lucknow
Indian Council of Medical Research, New Delhi
Gadjah Mada University, Jogjakarta, Indonesia
Universite de Teheran, Teheran
Dr. Michael Fekete, Hebrew University, Jerusalem
Dr. Louis Guttman, Israel Institute of Applied Social Research, Jerusalem
Dr. Shlomo Kulcsar, Akko State Hospital, Akko, Israel
Mr. H. Kukru Selcikoglu, Gazi Egitim Enstitutusu, Ankara
Psychologisches Institut Der Universitat Hamburg, Hamburg
Clinica Psiquiatrica University, Santiago de Chile

REPORT OF MEMBERSHIP COMMITTEE TO ANNUAL BUSINESS MEETING AUGUST 31, 1956

This is the fifth Annual Report of the present chairman of your Membership Committee. For the first time, the number of applications received during a one year period is reported in three figures—a total of 101. These 101 were distributed as follows:
25 for Fellow, 10 of whom were already Associate Members,
67 for Associate
9 for Student Affiliate
0 for Affiliate

There were fifteen applications pending from the previous year.

The detailed volume of work in tabular form is as follows:

	F	A	S.A.
Applications pending from previous year	3	10	2
Applications received during year	25	67	9
Total of 116 to be accounted for	28	77	11

Applications disposed of during year:			
98 Accepted	23	66	9
3 Rejected	2	1	
1 Deferred		1	
6 Inactivated	1	4	1
Applications now pending....			
	2	5	1
Total accounted for			
			116

Your Society elects new members twice a year. Applications are reviewed by the Membership Committee and appropriate action is recommended to the Board of Trustees. Your chairman concludes her Annual Report with her annual exhortations:

1. Qualified Associate members should apply for Fellow membership.
2. Qualified Student Affiliates should apply for Associate membership.
3. Members in contact with graduate students should inform them about Student Affiliate membership.
4. Members in contact with colleagues in the social and behavioral sciences should inform them of Affiliate membership.
5. Members who are designated as sponsors should expedite our work by prompt return of the sponsor data-sheets.

Respectfully submitted,

ARTHUR BURTON
HERBERT DORKEN, JR.
E. LOUISE GAUDET
WALTER G. KLOPFER
LAWRENCE S. ROGERS
GERTHA WILLIAMS
ESTHER K. ROSEN, *chairman*

REPORT OF THE COMMITTEE ON REGIONAL DIVISIONS, AUG. 1956

The by-laws of the Society, with regard to the Committee on Regional Divisions, state that:

"This Committee shall encourage and foster the formation of local divisions of the Society, and shall, so far as may be, represent their geographical interests within the National organization. It shall consist of one representative of each region who shall reside within the region. These representatives shall be known as Regional Representatives. This committee may have such additional members as the President may from time to time appoint."

The geographical representation was reviewed resulting in the reallocation of several states and the renaming of two regions so that the divisional structure would closely parallel existing psychological associations.

To avoid overlap several rather arbitrary decisions were necessary, particularly with regard to Kansas and the District of Columbia. The present representation is as follows:

Eastern: Conn., Maine, Mass., N. H., R. I., Vt., N. J., N. Y., Pa., Del., Md., and D. C. (These are roughly the New England and Middle Atlantic States and is essentially, the EPA area.)

Southeastern: Va., Ky., N. C., Tenn., Ga., Ala., Miss., La., S. C., Fla. and Puerto Rico. (These are roughly the South-eastern States and is essentially the SEPA area.)

Midwestern: N. Dak., S. Dak., Nebr., Minn., Iowa, Mo., Wis., Mich., Ill., Ind., Ohio and W. Va. (These are roughly the East and West North Central States and is essentially the MPA area.)

Southwestern: Tex., Okla., Ark. and Kans. (These are roughly the Southwestern States and is essentially the SWPA area.)

Rocky Mountain: Idaho, Mont., Wyo., Utah, Colo. and New Mex. (These are roughly the Rocky Mountain States and is essentially the RM Branch of the APA area.)

Western: Wash., Ore., Nev., Calif., Ariz. and Hawaii. (These are roughly the Pacific States and is essentially the WPA area.)

Canadian: The Dominion of Canada. (What might be termed the Northern region and is the CPA area.)

The Committee representatives are as follows:

Eastern: Henrietta K. Woolf, (1957), Washington, D. C.
Southeastern: Robert M. Hughes (1958), Atlanta, Ga.
Midwestern: Johanna K. Tabin (1957), Chicago, Ill.
Roy M. Whitman (1957), Chicago, Ill.
Southwestern: Austin Foster (1958), Galveston, Tex.
Rocky Mountain: Gerard G. Neuman (1956), Salt Lake City, Utah
Western: Arthur Burton (1957), San Jose, Calif.
Canadian: Ernest G. Poser (1958), Montreal, Canada
Chairman: Herbert Dorken Jr. (1958), Montreal, Canada

One of the aims of the Committee has been to stimulate activities of interest to the Society in the various regions. Often this is best accomplished by collaborating with regional and local professional associations on matters of common interest. Co-sponsored programs, the arrangement for symposia on

projective techniques, and research papers at regular and annual meetings of associations within the region can exert a strong influence. It seems particularly important not to restrict the scope of this co-operation to psychological associations but rather, to strive for interdisciplinary communication. Notices sent to the newsletters of relevant state and local associations may assist in attracting interest. Bulletin boards perhaps listing members of the Society within a given region, and displaying Society literature such as the "Information to Applicants for Membership" sheet are a further medium of publicity.

Dr. Hughes, the Southeastern representative, has been active in attempting to organize a regional group and has asked SEPA for program time for the Southeastern Division of the Society for Projective Techniques. An organization meeting was held at the time of the SEPA meeting on April 30, 1956. Dr. Foster has extended invitations to qualified personnel within his region to form a Southwestern Chapter of the Society for Projective Techniques and reports favorable response including plans to meet jointly with SWPA.

A concerted effort was made to develop more Local Groups. The membership directory was reviewed and in each state or city with a nucleus of six or more members the senior member was encouraged to attempt the organization of a Local Group. With one exception, the response was decidedly unfavorable and made it evident that little could be gained from this approach. Apparently the six Local Groups in existence fulfill some need in their professional community. In most instances, fees or admission charges permit the group to have invited speakers. Less frequently, members in an area that is rather isolated may band together for mutual edification. Apart from some such restricted and clearly defined purpose, local groups are not able to arouse sufficient interest. Then, many hospitals, universities and training centers have active local discussion groups so that the remaining time and interest in meetings is focussed on the regional and national association with their highly organized programs. There is also a trend for state (local) associations to be concerned with professional problems and to look to the regional association for a scientific program.

The existing Local Groups currently have the following activities, officers and program:

New York Chapter: maintains an annual Program, largely formal papers by senior

members of the profession. Mailing list of over 2000, notified of meetings and invited to attend, admission fee: students \$1.00, others \$2.00.

Executive: pres., Dr. Emanuel K. Schwartz; sec. treas., Dr. Gertrude Brody (410 Central Park West, NYC); and additional executive committee members.

Program: May 5, 1956, Psychoanalytic interpretations of projective techniques. Chmn., T. Abel and E. Schwartz. Speak., R. Fine, S. Deri, G. Booth, J. Levi, P. Vorhaus. Also an advanced seminar in collaboration with the Post-graduate Center for Psychotherapy on "Psychotherapy and Rethinking" with P. Vorhaus, M. Rickers-Ovsiankina, J. Holzberg, S. Kutash. (Fridays Jan. 20 through Feb. 10). Fee \$12.

Philadelphia Chapter: maintains an active monthly program of lectures and seminars by senior members of the profession. Local membership about 22, meetings open to non-members. Seminars \$7 members, \$10 guests, lecture 0 and \$1.

Executive: chm. Dr. Clellen L. Morgan; sec. treas., Dr. Dorothy K. Hallowell (3318 Midvale Ave., Phila. 29).

Program: Oct. 55. Some aspects of Rorschach Interpretation. L. Phillips.

Nov. 55. Social and cultural impact upon individual personality dynamics. N. Sanford.

Jan. 56. The hospital context of psychiatric illness. E. Stainbrook.

Feb. 56. Perception as a clinical problem. S. Kutash.

Mar. 56. Problems in differential diagnosis. Z. Piotrowski.

Apr. 56. Existential analysis. U. Sonnenmann.

Michigan Society (Detroit): maintains an annual program of extensive panel discussions and, in the past, workshops. Local membership more than 27, meetings open to non-members. Fees charged as required to meet expenses of outside speakers.

Executive: pres. Dr. Gertha Williams; sec. treas. Mrs. Evelyn Dryzer Eglash (4625 Second Ave., Apt. 301, Detroit 1, Mich.)

Program: March 24, 1956. Panel discussion in conjunction with Michigan Academy of Sciences, Arts and Letters on, "Interprofessional relationships in psychodiagnosis." Chmn. M. Mathews, Speak., N. Schkloven (psychiat.), D. Wineman (soc. work), C. Wheeler (teach.).

Northern California Division (San Francisco): maintains an active series of open

quarterly meetings. Local membership of approx. 60, with infrequent attendance of about 50 to 60 others. Voluntary contributions to cover petty cash mailing and announcement expenses.

Executive: chmn., Dr. Christine Miller; sec. treas. Lt. Col. Wendell R. Wilkin (P. O. Box 146, Letterman Army Hospital, Presidio of San Francisco, Calif.); exec. com. Dr. Ludwig Immergluck, Dr. Joseph Luft, Miss Betty Kalis, Dr. David Roger.

Program: Feb. 15, '56. Psychological variables in human cancer. B. Klopfer, discuss. H. Gough.

May 17, 1956. Research in personality dynamics in the Institute of Applied Psychology at the University of Stockholm, Sweden. K. Palmquist.

Southern California Division (Los Angeles): no report for 1955-56. Maintained an active program of workshops in 1954-55, membership at that time of about 80. *Executive:* pres. E. Shneidman; v. pres. F. Diamond; sec. treas. Dr. Anderson (dept. Psychol. Univ. Calif. Los Angeles 24).

Montreal Group: maintains an active program during the academic year consisting of papers, case presentations and symposia. Membership of 37, meetings open to non-members. Annual dues \$1 to cover mailing expenses.

Executive: chmn., Mr. S. Gerald Shane; sec. treas. Mrs. Barbara deVault (Dept. Psychiat. Montreal General Hospital, Montreal 25, Que.); prog. and memb. com., Dr. Blossom Wigdor, Dr. Gabrielle Clerk, Dr. Herbert Dorken.

Program: Oct. '55. The gambling phenomena as studied by projective techniques. N. Wisebord.

Dec. '55. Joint meeting with Psychological Association of the Province of Quebec. Personality and occupational choice. A. Roe.

Jan. '56. A case analysis through the use of projective techniques. H. Dorken, B. Wigdor, G. Shane, E. Koranyi.

Feb. '56. Observations in projective testing of schizophrenic children. M. Golick.

Apr. '56. The teaching of projective techniques: symposium. E. Poser, G. Clerk, B. Wigdor, H. Lehmann (chmn.).

Correspondence with the regional representatives and local chapters as well as the executive of the Society makes it clearly ap-

parent that our future development hinges, in large measure, upon a continued growth of membership. At the national level final preparations were completed to circulate all APA Division 12 members who are non-members of the Society. Each recipient received a letter cosigned by the President and the Chairman of this Committee, a reprint of the 1955 Journal index, and an "Information to Applicants for Membership Sheet" and a reference to the 1956 Membership Directory. Non-member journal contributors may be added to this program. There has also been a suggestion to ask all members of the Society to recommend colleagues for membership.

At the local and regional level a number of campaigns were undertaken. Dr. Poser, the Representative for Canada, wrote to all members in Canada sending them an application for associate membership form and the leaflet setting forth the membership requirements. Members were asked to forward these to qualified colleagues. Material was sent to all existing local chapters so that non-members in attendance at meetings might in turn be stimulated to join the parent Society. The Eastern, Midwestern, Southeastern and Southwestern representatives have been active in their regions trying to encourage new membership through personal contact. A surge of applications from Texas attests to the effectiveness of Dr. Foster's program.

This vigorous attention to new membership has brought the problem of sponsors for applications to the fore. When there are members within the region of the applicant, reference to the membership directory may be all that is necessary. However, in many regions members are scarce, if present at all. This is particularly true for Canada with the exception of the Montreal area, for the Rocky Mountain Region and, of course, for foreign countries. But a review of our membership shows that the problem is even more extensive since approximately half of the total membership is clustered within the three states of California, New York and Pennsylvania. The present requirements whereby each application must be sponsored by two members perpetuates this dilemma. This was reviewed at the March meeting of the Board of Trustees where it was agreed that in membership scarce areas a reasonable substitute might be accepted in lieu of sponsors, e.g. university staff members, APA Fellows, publications of the applicant, etc. Regional representatives could play a major

role in assisting the Membership Committee by appraising the reputation of the agency where such an applicant is employed, by acting as *sponsors* themselves, etc.

In the search for sponsors, the geographical listing in the Membership Directory can be of considerable assistance. The utility of this listing could be enhanced if members were listed by greater metropolitan areas (within a given state), rather than by small suburbs or merely by state. Regional Representatives have been asked to review their region and forward a revised listing to the Executive Editor.

Over the years from 1936, with the inauguration of the Rorschach Research Exchange, many members have served the Society and so contributed to its development. It seemed fitting to recognize their contribution by publication in the Journal of a listing of Officers, Editorial Staff and Committee Chairman. A list has been prepared, covering the years 1936 to 1956 inclusive and paralleling volumes I to XX inclusive, of our Journal. In view of plans to promote a ten volume publication by reissuing volumes XI through XX, the list will be published at a particularly appropriate time.

By more clearly defining the scope of this Committee's activities two matters were set aside as the function of other committees. The compilation of a list of centers offering training in projective techniques was considered as a potential source of new members. However, this would duplicate the work of the Committee on Training. Several inquiries were received concerning the affiliation of foreign groups but this problem was passed on to the Board of Trustees and the International Committee and will require policy

decisions before any action can be taken. An ad hoc Committee on Foreign Groups was created at the March Board meeting to review the matter and formulate recommendations for the *consideration of the Board*; the President and the Chairmen of the International Committee and the Committee on Regional Divisions to constitute the committee.

HERBERT DORKEN JR., Ph.D.
Committee on Regional Divisions
Chairman

WORKSHOP

A course entitled "Psychotherapy and Projective Techniques" will be given jointly by the New York Chapter of The Society for Projective Techniques and the Postgraduate Center for Psychotherapy on January 18, 25, and February 1, and 8, from 8:00 p.m. to 10:00 p.m. The course will deal with theoretical and practical implications of projective technique findings and their application to the processes of psychotherapy. Patient communication in the test situation will be related to patient communication in the therapeutic situation. Attempt will be made to coordinate findings in various tests with anticipated patient functioning on various levels, such as free association, transference and dreams in the course of therapy.

The course will be given for 4 sessions for \$12.00. The lecturers will be Theodore M. Abel, Ph.D., Emanuel K. Schwartz, Ph.D., Lily H. Gondor and Leopold Bellak, M.D.

The officers elected for this year for the New York chapter are Emanuel K. Schwartz, president and Janet Ginandes, secretary-treasurer.

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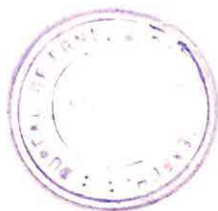
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